=> FILE REG

FILE 'REGISTRY' ENTERED AT 16:35:56 ON 18 NOV 1998
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STRUCTURE FILE UPDATES: 15 NOV 98 HIGHEST RN 214258-38-5
DICTIONARY FILE UPDATES: 17 NOV 98 HIGHEST RN 214258-38-5

TSCA INFORMATION NOW CURRENT THROUGH JUNE 29, 1998

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Stereochemical name changes have been adopted and appear in CN's beginning 6/29/98. See the online news message for details.

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 16:36:03 ON 18 NOV 1998
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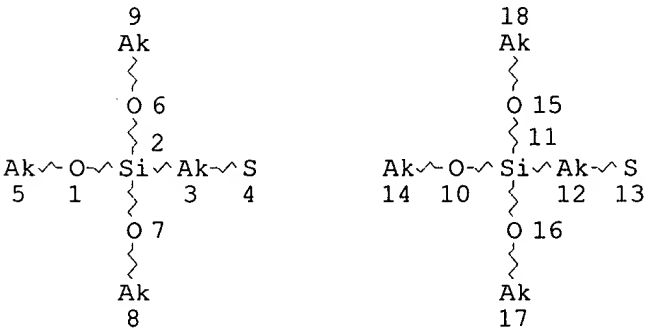
FILE COVERS 1967 - 18 Nov 1998 VOL 129 ISS 21
FILE LAST UPDATED: 18 Nov 1998 (981118/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

=> D QUE L78

L47 STR




broad structure search
239 structures

NODE ATTRIBUTES:
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CONNECT IS M2 RC AT 13
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
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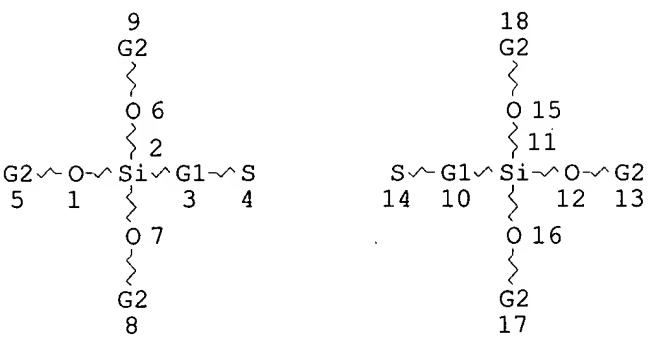
L51 239 SEA FILE=REGISTRY SSS FUL L47 AND L49
L60 STR




Subset search with more exact structure

REP G1=(1-9) CH2
VAR G2=ME/ET/N-PR/I-PR
NODE ATTRIBUTES:
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CONNECT IS M2 RC AT 14
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

117 structures

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
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L68 107 SEA FILE=REGISTRY ABB=ON L67 NOT 1-10/N
L69 100 SEA FILE=REGISTRY ABB=ON L68 NOT M/ELS
L70 96 SEA FILE=REGISTRY ABB=ON L69 NOT 1-3/AS
L71 72 SEA FILE=REGISTRY ABB=ON L70 NOT 7-20/O
L72 426 SEA FILE=HCAPLUS ABB=ON L71
L73 358 SEA FILE=HCAPLUS ABB=ON L72 AND (ELASTOMER? OR RUBBER?)/SC,SX,AB,BI
L74 165 SEA FILE=HCAPLUS ABB=ON L73 AND TIRE#
L75 169 SEA FILE=HCAPLUS ABB=ON L72(L)MOA/RL
L76 106 SEA FILE=HCAPLUS ABB=ON L74 AND L75
L78 70 SEA FILE=HCAPLUS ABB=ON L76 AND COUPL?(3A)SILANE?

426 CA ref's had to combine with utility - still 70 CA ref's

=> D L78 CBIB ABS IND HITSTR 1-40

L78 ANSWER 1 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:653549 Document No. 129:277272 **Tire** tread with quantitative silica reinforcement. Zanzig, David John; Sandstrom, Paul Harry; Verthe, John Joseph Andre; Crawford, Michael Julian (The Goodyear Tire & Rubber Company, USA). U.S. US 5817719 A 19981006, 6 pp. Cont. of U.S. Ser. No. 447,159, abandoned. (English). CODEN: USXXAM. APPLICATION: US 96-725363 19961003. PRIORITY: US 95-447159 19950519.
AB The invention relates to a **tire** with a tread which is quant. reinforced with silica where the tread **rubber** is composed of a backbone of a combination of isoprene/butadiene copolymer **rubber**, cis 1,4-polyisoprene natural

**rubber**, and halogenated copolymer of isobutylene and p-methylstyrene. Such tread **rubber** may optionally also contain other **elastomers** such as, for example, cis-1,4-polybutadiene **rubber** and styrene/butadiene copolymer **rubber**. A **silane coupler** is present which greatly improves the reinforcing power of the silica and significantly enhances the balance of properties of the **tire**. An example contained emulsion SBR 25, butadiene-isoprene **rubber** 25, cis-1,4-butadiene **rubber** 20, natural **rubber** 15, EMDX 90-10 brominated **rubber** 15, silica 80, and X50S coupler 12 parts.

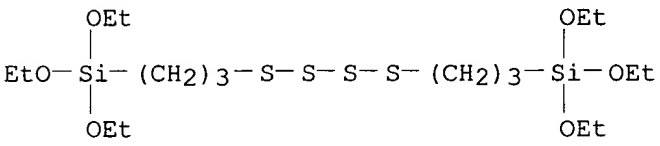
IC ICM C08L033-14
NCL 125212000
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
ST **tire** tread silica reinforced
IT cis-1,4-Butadiene **rubber**
RL: TEM (Technical or engineered material use); USES (Uses)
(Budene 1207; silica-reinforced **tire** tread compns. contg.)
IT Silica gel, uses
RL: MOA (Modifier or additive use); USES (Uses)
(Hi-Sil 210; **tire** tread compns. contg.)
IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(N330; **tire** tread compns. contg. silica and)
IT Synthetic **rubber**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(butadiene-isoprene-styrene; silica-reinforced **tire** tread compns. contg.)
IT Styrene-butadiene **rubber**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(emulsion; silica-reinforced **tire** tread compns. contg.)
IT Synthetic **rubber**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(isobutylene-methylstyrene, brominated, EMDX 90-10; silica-reinforced **tire** tread compns. contg.)
IT **Coupling** agents
(**silane**-based; silica-reinforced **tire** tread compns. contg.)
IT ABS **rubber**
Natural **rubber**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(silica-reinforced **tire** tread compns. contg.)
IT **Tire** treads
(with quant. silica reinforcement)
IT 9003-56-9
RL: MOA (Modifier or additive use); USES (Uses)
(abs **rubber**, silica-reinforced **tire** tread compns. contg.)
IT **40372-72-3**, X50S (Coupling agent)
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; silica-reinforced **tire** tread compns. contg.)
IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(pptd.; **tire** tread compns. contg.)
IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer 25102-52-7, Butadiene-isoprene copolymer 26602-62-0, Butadiene-isoprene-styrene copolymer 61128-14-1D, Isobutylene-p-methylstyrene copolymer, brominated
RL: TEM (Technical or engineered material use); USES (Uses)
(**rubber**; silica-reinforced **tire** tread compns. contg.)
IT 9003-55-8

RL: MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene **rubber**, emulsion; silica-reinforced **tire** tread compns. contg.)

IT 9003-17-2
RL: TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, Budene 1207; silica-reinforced **tire** tread compns. contg.)

IT **40372-72-3**, X50S (Coupling agent)
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; silica-reinforced **tire** tread compns. contg.)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 2 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:618694 Document No. 129:246427 Silica-reinforced **rubber** compositions and pneumatic **tire** with treads made from the compositions. Cohen, Martin Paul; Losey, Cheryl Ann; Roenau, Raymond Benjamin; Futamura, Shingo; Materne, Thierry Florent Edme; Hunt, James Oral; Thise, Ghislain Adolphe Leon (The Goodyear Tire + Rubber Co., USA). Eur. Pat. Appl. EP 864605 A2 19980916, 12 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 98-103688 19980303. PRIORITY: US 97-814956 19970310.

AB The compns. comprise at least 1 **elastomer**, silica, a silica coupler, a hydrophobating agent and carbon black. Thus, mixing an emulsion-polymn. SBR 25 with isoprene-butadiene **rubber** 45, cis-1,4-polybutadiene 20, a natural **rubber** 10, processing oils and waxes 24.9, fatty acid 3, ZnO 2.5, antioxidants 3, silica 80, bis(3-triethoxysilylpropyl)tetrasulfide 12.8 and Si 118 (octadecyltrimethoxysilane) (I) 3, then vulcanizing with S 1.4 and vulcanization accelerators 3.7 parts while heating gave a compn. showing lower mix work and lower compd. viscosity and cured products with better low- and high-temp. hysteresis and modulus as compared to a similar compn. not contg. the I.

IC ICM C08K005-54
ICS C08L021-00; B60C001-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST hydrophobating agent **rubber** compounding **tire** tread; silica reinforced **rubber** compounding hydrophobic agent; octadecyltrimethoxysilane hydrophobating agent **rubber**; **silane coupler** reinforced **rubber** **tire** tread; carbon black filler **rubber** **tire** tread; hysteresis modulus property **tire** compounding

IT cis-1,4-Butadiene **rubber**
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(Budene 1254; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT Polysulfides
RL: MOA (Modifier or additive use); USES (Uses)
(alkoxysilyl-contg. coupling agent; silica-reinforced

**rubber** compns. and pneumatic **tire** with treads made from compns.)

IT Synthetic **rubber**, properties
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(butadiene-isoprene; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT Coupling agents
**Tire** treads
(silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT Natural **rubber**, properties
Polymer blends
Styrene-butadiene **rubber**, properties
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT Carbon black, uses
Silanes
RL: MOA (Modifier or additive use); USES (Uses)
(silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT **40372-72-3**, X 50S
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT 2943-75-1, Octyltriethoxysilane 7399-00-0, Si 118 16415-13-7, Hexadecyltriethoxysilane 67859-75-0, Methyloctadecyldiethoxysilane
RL: MOA (Modifier or additive use); USES (Uses)
(hydrophobating agent; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT 7631-86-9, Z 1165MP, uses
RL: MOA (Modifier or additive use); USES (Uses)
(reinforcements; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

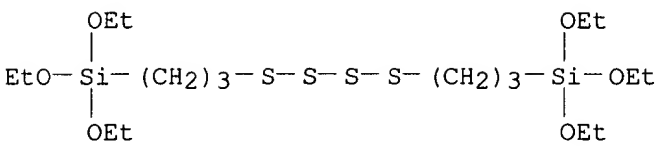
IT 25102-52-7, Butadiene-isoprene copolymer
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(**rubber**; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT 9003-55-8
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(styrene-butadiene **rubber**, silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT 9003-17-2
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(cis-1,4-Butadiene **rubber**, Budene 1254; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

IT **40372-72-3**, X 50S
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; silica-reinforced **rubber** compns. and pneumatic **tire** with treads made from compns.)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 3 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:613792 **Rubber** compositions with high abrasion resistance and low heat buildup. Arai, Keitetsu (Tokai Carbon Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10251455 A2 19980922 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 97-83339 19970317.

AB Title compns. useful for belts, hoses, or **tires**, comprise natural and/or synthetic **rubbers**, oxidized carbon black having BET oil adsorption sp. surface area (BETA) 70-160 m2/g, 24M4DBP adsorption (DBPA) 50-120 mL/100 g, and surface free energy (.tau.) .gtoreq.110 mJ/m2, **silane couplers**, and SiO2 having BETA .gtoreq.130 m2/g, av. diam. .ltoreq.200 .mu.m, and polarity interaction factor (Sf; benzene as the polar group) .ltoreq.1.45. A SBR 1500 compn. contg. oxidized carbon black (with BETA 142 m2/g, DBPA 96 mL/100g, .tau. 141.7 mJ/m2) 40, SI 69 (coupler) 1, 200-.mu.m SiO2 (with BETA 170-220 m2/g, Sf 1.31) 1, and S 1.75 phr was vulcanized to form a test piece with high tensile strength, Pico abrasion test 0.0273, and 60.degree. tan.delta. 0.132.

IC ICM C08L021-00
ICS C08K003-04; C08K003-36; C08K005-54; C09C001-56

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)

ST abrasion resistance **rubber** oxidized carbon black; mech strength **rubber** oxidized carbon black; heat buildup redn oxidized carbon black; silica coupler **rubber** oxidized carbon black

IT Carbon black
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(oxidized; specific oxidized carbon black and silica- contg. **rubber** compns. with low heat buildup and high abrasion resistance)

IT Abrasion-resistant materials
Belts
Coupling agents
Hoses
**Tires**
(specific oxidized carbon black and silica- contg. **rubber** compns. with low heat buildup and high abrasion resistance)

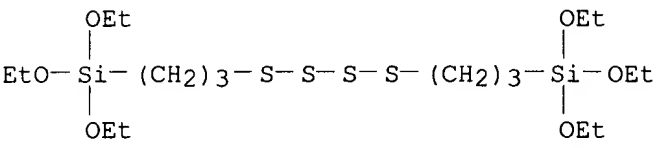
IT Styrene-butadiene **rubber**
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(specific oxidized carbon black and silica- contg. **rubber** compns. with low heat buildup and high abrasion resistance)

IT 120-78-5, Dibenzothiazyl disulfide **40372-72-3**, SI 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; specific oxidized carbon black and silica- contg. **rubber** compns. with low heat buildup and high abrasion resistance)

IT 7631-86-9, Silica
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(specific oxidized carbon black and silica- contg. **rubber** compns. with low heat buildup and high abrasion resistance)

IT **40372-72-3**, SI 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; specific oxidized carbon black and silica- contg. **rubber** compns. with low heat buildup and high abrasion

resistance)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 4 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:436009 Document No. 129:150005 Wear-resistant **rubber** compositions containing silicic acid and pneumatic **tires** therefor. Yagisawa, Kazuhiro; Araki, Shunji (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10182877 A2 19980707 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-351163 19961227.
AB The compns. contain (A) 100 parts natural **rubbers** and/or diene-type synthetic **rubbers**, (B) 10-90 parts water-contg. silicic acid (prepd. by wet process) having BET sp. surface area (N2-SA) 170-300 m2/g and ratio of Hg sp. surface area (Hg-SA) and N2-SA (Hg-SA/N2-SA) .gtoreq.1.08. Thus, 80 L Na silicate soln. (SiO2/Na2O = 3.3, SiO2 concn. 150 g/L) and water were heated at 80.degree., neutralized with H2SO4, heated at 96.degree., and aged in the presence of H2SO4 to give a water-contg. silicic acid showing N2-SA 192 m2/g, Hg-SA 222 m2/g, and Hg-SA/N2-SA 1.16, 70 parts of which was compounded with oil-contg. JSR-SBR 0120 137.5, Si 69 7, stearic acid 2, N-phenyl-N'-isopropyl-p-phenylenediamine 1, ZnO 3, vulcanizing agents (DPG + NS) 1.7, and S 1.5 parts and molded to give a test piece showing good tensile strength and wear resistance.
IC ICM C08L007-00
ICS B60C001-00; C08K003-04; C08K003-34; C08K005-54; C08L009-00
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
ST wear resistance **rubber** compn pneumatic **tire**; natural **rubber** silicic acid **tire** tread; diene **rubber** **tire** tread strength
IT cis-1,4-Butadiene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(JSR-BR 01; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(SBR 0120; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT Carbon black, properties
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Seast 7H, fillers; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT **Silanes**
RL: MOA (Modifier or additive use); USES (Uses)
(**coupling** agents; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT **Coupling** agents
(**silanes**; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT Abrasion-resistant materials

Fillers
(silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT **Tires**
(treads; wear-resistant **rubber** compns. contg. silicic acid fire pneumatic **tires** treads)

IT 4420-74-0, KBM 803
RL: MOA (Modifier or additive use); USES (Uses)
(coupling agents; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; wear-resistant **rubber** compns. contg. silicic acid fire pneumatic **tires** treads)

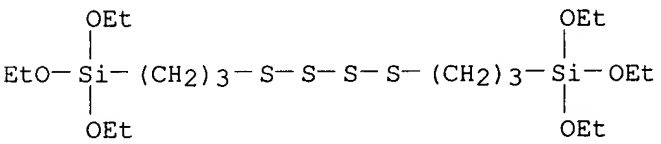
IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, SBR 0120; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT 1343-98-2P, Silicic acid
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(wet process, filler; Wear-resistant **rubber** compns. contg. silicic acid for pneumatic **tire** treads)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, JSR-BR 01; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; wear-resistant **rubber** compns. contg. silicic acid fire pneumatic **tires** treads)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 5 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:430852 Document No. 129:82685 Diene **rubber** compositions with low fuel consumption and low exothermic property and pneumatic **tires** having **tire** treads therefrom. Ozaki, Yuichiro; Hayashi, Hiroyuki (Toyo Tire and Rubber Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10182880 A2 19980707 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-357314 19961225.

AB The diene **rubber** compns. for the **tire** treads contain carbon black (CB), SiO2, **silane coupling** agents, and polymer-CB crosslinking agents. Thus, a **tire**

(11R22.5 14PR) having reduced rolling resistance, good abrasion resistance, and high tear strength was equipped with a **tire** tread composed of natural **rubber** 100, N 220 (CB) 30, Sumifine 1162 3, SiO2 15, Si 69 0.75, stearic acid 3, ZnO 3, arom. oil 3, wax 2, antioxidant 2, curing accelerator 2, and S 2 parts.

IC ICM C08L009-00
ICS B60C001-00; C08K003-04; C08K003-36

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST diene **rubber tire** tread abrasion resistance; natural **rubber tire** tread abrasion resistance; carbon black polymer crosslinking agent **tire**; methylnitropropyl hexanediamine crosslinking agent diene **rubber**; silica filled diene **rubber tire** tread

IT Butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(;diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(N 220; diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT Abrasion-resistant materials
(diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT Crosslinking agents
(for polymers and carbon black; diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT **Tires**
(treads; diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, ;diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

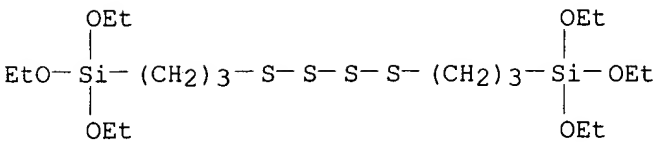
IT 114136-87-7, Sumifine 1162
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinking agents, for polymers and carbon black; diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT 7631-86-9, Silica, uses **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(diene **rubber** compns. with low fuel consumption and low exothermic property for **tire** treads)

RN 40372-72-3 HCAPLUS

CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 6 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:430851 Document No. 129:150004 Wear-resistant **rubber** compositions containing silicic acid and pneumatic **tires** having **tire** treads therefrom. Yanagisawa, Kazuhiro; Araki, Shunji (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10182878 A2 19980707 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-351164 19961227.

AB The compns. contain (A) natural **rubbers** and/or diene-type synthetic **rubbers**, (B) 10-90 phr water-contg. silicic acid prepd. by wet process and showing BET sp. surface area (N2-SA) 200-300 m2/g, Hg sp. surface area (Hg-SA) .ltoreq.150 m2/g, ratio of dibutylamine absorption (DBA) and N2-SA (DBA/N2-SA) .ltoreq.1.4, and Hg-SA/N2-SA .ltoreq.0.6 and optionally (C) 1-15% (per B) **silane coupling** agents and (D) 5-80 phr carbon black, B + D .ltoreq.120 phr. The pneumatic **tires** having **tire** treads of the **rubber** compns. are also claimed. Thus, 80 L Na silicate soln. (SiO2/Na2O = 3.3, SiO2 concn. 150 g/L) and water were heated at 85.degree., neutralized with H2SO4, heated at 96.degree., and aged in the presence of H2SO4 to give a water-contg. silicic acid showing N2-SA 267, m2/g, Hg-SA 135 m2/g, DBA 270 mmol/kg, DBA/N2-SA 1.01, and Hg-SA/N2-SA 0.51, 80 parts of which was compounded with oil-contg. JSR-SBR 0120 137.5, Si 69 8, stearic acid 2, N-phenyl-N'-isopropyl-p-phenylenediamine 1, ZnO 3, vulcanizing agents (DPG + NS) 1.7, and S 1.5 parts to give test pieces showing JIS K 6251 tensile strength 112 and Lambourn abrasion test (British Std. 903, part A, D) 111.

IC ICM C08L007-00
ICS B60C001-00; C08K003-04; C08K003-34; C08K005-54; C08L009-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST wear resistant **rubber** compn silicate filler; silicic acid **rubber** wear resistant **tire**; tread **tire** silicic acid **rubber**; abrasion resistance **tire** tread **rubber**

IT cis-1,4-Butadiene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(JSR-BR 01; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

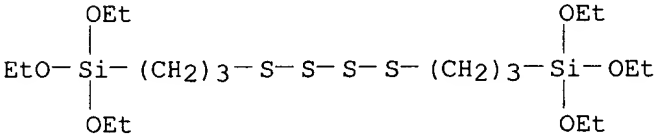
IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(SBR 0120; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT Carbon black, properties
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Seast 7H; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT **Silanes**
RL: MOA (Modifier or additive use); USES (Uses)
(**coupling** agents; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)

IT **Coupling** agents
(**silanes**; silicic acid-reinforced wear-resistant

**rubber** compns. for **tire** treads)
IT Abrasion-resistant materials
(silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT Natural **rubber**, properties
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT Nitrile **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT **Tires**
(treads; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT 4420-74-0, KBM 803 **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT 9003-18-3
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nitrile **rubber**, silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, SBR 0120; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT 1343-98-2P, Silicic acid
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(wet process; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, JSR-BR 01; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; silicic acid-reinforced wear-resistant **rubber** compns. for **tire** treads)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 7 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:388561 Document No. 129:42225 Fillers for reinforcing **rubbers** and **rubber** compositions and **tire**

**rubber** compositions containing the same. Kawazura, Tetsuji; Kawazoe, Masayuki (Yokohama Rubber Co., Ltd., Japan; Kawazura, Tetsuji; Kawazoe, Masayuki). PCT Int. Appl. WO 9823677 A1 19980604, 21 pp. DESIGNATED STATES: W: KR, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 97-JP4233 19971120. PRIORITY: JP 96-314946 19961126.

AB The title fillers are formed by adhering an alkoxysilyl compd. to fillers having surface made of carbon black and silica. An aq. carbon black slurry at 90.degree. and pH 10 was treated with water glass, stirred at the same pH and temp. for 1 h, adjusted to pH 7, stirred Si69 for 30 min, filtered, and used with SBR compds.

IC ICM C08K009-06
ICS C08K013-06; C08L009-00

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)

ST reinforcing filler **rubber** compn; carbon black silica **silane coupler** filler; **tire** **rubber** reinforcing filler

IT Coupling agents
**Tires**
(fillers for reinforcing **rubbers** and **rubber** compns. and **tire rubber** compns. contg. the same)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fillers for reinforcing **rubbers** and **rubber** compns. and **tire rubber** compns. contg. the same)

IT Styrene-butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(fillers for reinforcing **rubbers** and **rubber** compns. and **tire rubber** compns. contg. the same)

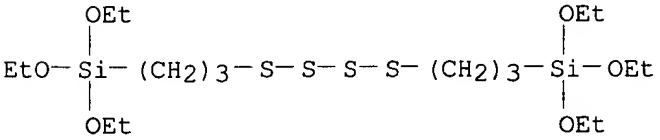
IT 7631-86-9, Silica, uses **40372-72-3**, Si69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(fillers for reinforcing **rubbers** and **rubber** compns. and **tire rubber** compns. contg. the same)

IT 9003-55-8
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, fillers for reinforcing **rubbers** and **rubber** compns. and **tire** **rubber** compns. contg. the same)

IT **40372-72-3**, Si69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(fillers for reinforcing **rubbers** and **rubber** compns. and **tire rubber** compns. contg. the same)

RN 40372-72-3 HCAPLUS

CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 8 OF 70 HCAPLUS COPYRIGHT 1998 ACS

1998:352106 Document No. 129:16994 Pneumatic **tires** using cellular **rubbers** as treads. Aoki, Hirofumi (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10147106 A2 19980602 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-306511 19961118.

AB The **tires** have sipes in width direction which is deeper than the max. depth of the width direction grooves and are equipped with treads of cellular **rubbers** with expansion ratio 3-25% and contg. 5-15 phr particles contg. .gtoreq.20% Al(OH)3 and/or SiO2 with av. particle diam. 5-100 .mu.m and 10-40% (per the particle wt.) **silane coupling** agents. Cracking of sipes can be avoided. The **tires** offer smooth run and antiskid on ice, good abrasion resistance, and improved crack resistance of sipings. Thus, a 10-t truck was equipped with **tires** (10.00R20 14PR) comprising nitrile **rubber** 70, butadiene **rubber** 30, SAF carbon black 55, azodicarbonamide 55, urea 7, S 2.5, dibenzothiazyl disulfide 0.7, Al(OH)3 particle with av. diam. 20 .mu.m 8, and bis(3-triethoxysilylpropyl)tetrasulfide 2.4 parts.

IC ICM B60C001-00
ICS C08K003-36; C08K005-54; C08L021-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST pneumatic **tire** tread cellular **rubber** filler; truck **tire** tread cellular **rubber** filler; aluminum hydroxide cellular **rubber tire** tread; silica cellular **rubber** pneumatic **tire** tread; **silane coupling** agent cellular **rubber tire**; ethoxysilylpropyl sulfide coupling agent **rubber tire**; siping crack resistance truck **tire** tread

IT **Tires**
(antiskid treads; truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

IT Trucks
(**tires**; truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

IT Butadiene **rubber**, properties
Nitrile **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

IT **Tires**
(truck; truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

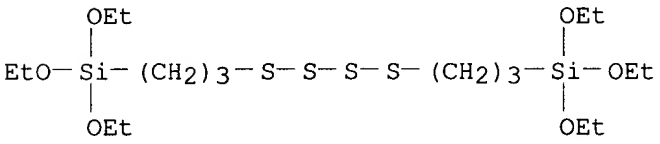
IT 9003-18-3
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nitrile **rubber**, truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

IT 7631-86-9, Silica, uses 21645-51-2, Aluminum hydroxide, uses

RL: MOA (Modifier or additive use); USES (Uses)
(truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; truck **tires** using particle-contg. cellular **rubbers** as antiskid treads with durable sipings)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 9 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:314806 Document No. 129:16993 Silica-containing vulcanizable **rubber** compositions with good processability and **tires** therewith. Umifuji, Hiroyuki (Yokohama Rubber Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10130430 A2 19980519 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-286718 19961029.

AB Title compns. contain alkyl hydrogen polysiloxanes. Thus, RSS 1 (natural **rubber**) 50.00, Nipol NS 116 50.00, Nipsil AQ (SiO2) 50.00, KF 99 (Me H polysiloxane) 0.40, diethylene glycol 2.50, ZnO 3.00, stearic acid 1.00, antioxidant 1.00, S 2.00, and vulcanization accelerator 1.00 part were kneaded to give a compn. showing Mooney viscosity (JIS K 6300, at 100.degree.) 142.0, vulcanization time (JIS K 6300) 33.1 min, and excellent vulcanizate surface appearance.

IC ICM C08L021-00
ICS B60C001-00; C08K003-04; C08K003-36; C08K009-06

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST **rubber** silica hydrogen polysiloxane **tire**

IT Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(RSS 1; vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT **Silanes**
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**coupling** agent; vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT **Coupling** agents
(**silanes**; vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT **Tires**
(vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT Carbon black, properties
Polysiloxanes, properties
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT Styrene-butadiene **rubber**, properties

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

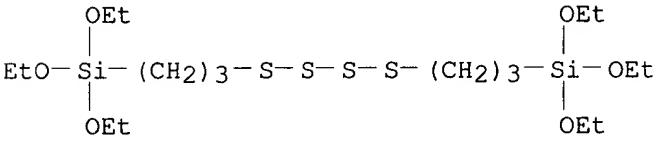
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(coupling agent; vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT 7631-86-9, Nipsil AQ, properties 26403-67-8, KF 99 49718-23-2D, Methylsilanediol homopolymer, trimethylsilyl-terminated
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(coupling agent; vulcanizable **rubber** compns. contg. silica and alkyl hydrogen polysiloxanes for **tires**)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 10 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:228649 Document No. 128:322704 Application of **silane coupling** agent MB-69 to heavy equipment **tire** tread compound. Guan, Shaohua; Liu, Rudong; Chen, Xiaoyu; Chen, Zengchun (Qingdao No.6 Rubber Plant, Tsingtao, 266021, Peop. Rep. China). Luntai Gongye, 17(9), 535-537 (Chinese) 1997. CODEN: LUGOFY. ISSN: 1006-8171. Publisher: Beijing Xiangjiao Gongye Yanjiuso Shejiyuan.

AB The application of **silane coupling** agent MB-69 to heavy equipment **tire** tread compd. contg. white carbon was studied. The results showed that the tensile strength, wear-resisting property, anti-tearing property and 300% stretching stress were obviously improved, and the tread extrusion temp. was decreased.

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST **silane coupling** agent **tire**

IT **Coupling** agents
(**silane coupling** agent MB-69 to heavy equipment **tire** tread compd.)

IT **Rubber**, uses
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(**silane coupling** agent MB-69 to heavy equipment **tire** tread compd.)

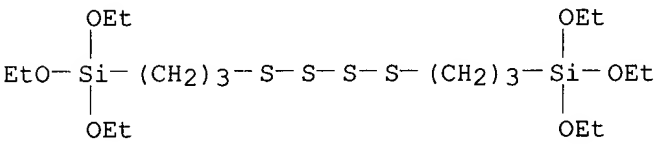
IT **Tires**
(treads; **silane coupling** agent MB-69 to heavy

equipment **tire** tread compd.)

IT **40372-72-3**, Bis[3-(triethoxysilyl)propyl] tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(MB 69; **silane coupling** agent MB-69 to heavy equipment **tire** tread compd.)

IT **40372-72-3**, Bis[3-(triethoxysilyl)propyl] tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(MB 69; **silane coupling** agent MB-69 to heavy equipment **tire** tread compd.)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 11 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:211253 Document No. 128:295728 Heavy-duty pneumatic **tires** containing organopolysiloxanes and with excellent chipping resistance. Harada, Masaaki; Yatsuyanagi, Akira; Ishikawa, Kazunori (Yokohama Rubber Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10087881 A2 19980407 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-244672 19960917.

AB The **tires** have treads comprising natural or diene **rubbers** (.gtoreq.60% isoprene **rubber**) 100, SiO2 (I) 3-30, carbon black (II) 20-60, and polysiloxane of av. polymn. degree 3-10,000 and contg. SiOR1 or SiOCOR2 [R1 = C1-18 (un)substituted hydrocarbyl or ether-linkage-contg. org. groups; R2 = H, C1-21 hydrocarbyl] 0.5-40% of I amt. Optionally, the tread compns. may contain 0.5-40% **silane coupling** agents. Thus, 100 g KF 99 was heated with 72 g EtOH at 80.degree. in the presence of H2PtCl6 to give a polysiloxane contg. 88:2 (unit ratio) [MeHSiO]/[MeSi(OEt)O], 2.0 parts of which was blended with natural **rubber** 100, II (Diablack I) 40, I 15, and usual additives 11.7 parts to give a tread compn. Then, the compn. was hot pressed at 160.degree. to give a sheet showing 300% modulus 15.5, tear strength 29.4, breaking elongation 510%, hardness (JIS K 6253) 67, tan.delta. (60.degree.) 0.173, and excellent appearance and abrasion resistance in driving test under heavy load.

IC ICM C08L007-00
ICS B60C001-00; B60C011-00; C08K003-04; C08K003-36; C08L009-00; C08L007-00; C08L083-04

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
Section cross-reference(s): 38

ST **tire** tread organopolysiloxane contg chipping resistance; ethoxylated methylhydrogenpolysiloxane **rubber** blend **tire** tread; carbon black silica **rubber** blend tread; heavy duty pneumatic **tire** tread durability

IT Carbon black, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(Diablack I; heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT Natural **rubber**, properties
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(RSS 3; heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT Polysiloxanes, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT Rosin
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT Isoprene **rubber**, properties
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT **Coupling** agents
(**silane**-based; heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT **Tires**
(treads; heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agents; heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

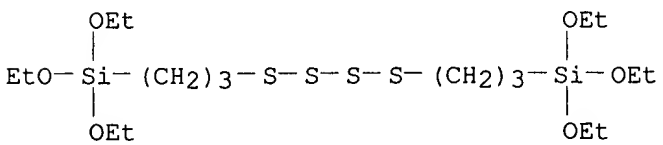
IT 7631-86-9, Nipsil AQ, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(fillers; heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT 64-17-5DP, Ethanol, reaction products with Me H polysiloxane 26403-67-8DP, KF 99, reaction products with ethanol 49718-23-2DP, Methylsilanediol homopolymer, trimethylsilyl-terminated, reaction products with ethanol
RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT 9003-31-0
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(isoprene **rubber**, heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agents; heavy-duty pneumatic **tires** contg. organopolysiloxanes with excellent chipping resistance)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 12 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:197810 Document No. 128:258347 **Tires** having soil-repellent tread lugs. Nohara, Daisuke; Ezura, Sakae (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10081112 A2 19980331 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-240570 19960911.

AB The **tires** have treads equipped with plural lugs having bottoms covered with soil-repellent **elastomers**, which contain 100 parts **rubber** and 1-50 parts **silane coupling** agents and show Ascar C hardness 2-70. The **tires** are useful for farm tractors, dump trucks, etc. Thus, a compn. comprising natural **rubber** 50, butadiene **rubber** 50, carbon black 50, aroma oil 30, stearic acid 3, ZnO 3, dinitrosopentamethylenetetramine 20, urea 5, Si 69 (coupling agent) 5, Nocceler NS-F 1, Nocrac 6C 2, and S 1.5 parts was used in tread lug formation.

IC ICM B60C011-11
ICS B60C011-00; C08K005-54; C08L021-00; B60C001-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST **tire** lug soil repellent **rubber**; **silane coupler** soil repellent tread lug

IT Butadiene **rubber**, properties
Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**rubbers** for **tire** tread lugs with good soil repellent properties)

IT **Coupling** agents
(**silanes**; in **rubbers** for **tire** tread lugs with good soil repellent properties)

IT **Tires**
(treads; **rubbers** for **tire** tread lugs with good soil repellent properties)

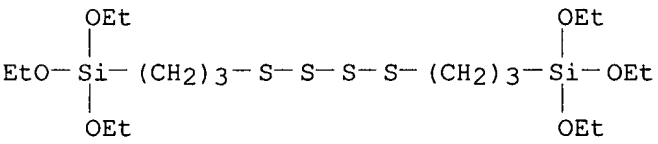
IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, **rubbers** for **tire** tread lugs with good soil repellent properties)

IT 4420-74-0, KBM 803 **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; in **rubbers** for **tire** tread lugs with good soil repellent properties)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; in **rubbers** for **tire** tread lugs with good soil repellent properties)

RN 40372-72-3 HCAPLUS

CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 13 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:175969 Document No. 128:193611 Silane-treated clay products, manufacture thereof, hydrous kaolin clay slurries, **rubber** compositions and **tires** containing the same. Freeman, Gary M.; Marshall, Carl J., Jr.; Lackey, Walter O.; Onizawa, Masao (J.M.

Huber Corporation, USA; Sanyo Trading Co., Ltd.). PCT Int. Appl. WO 9810013 A1 19980312, 64 pp. DESIGNATED STATES: W: AU, CA, KR, MX; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 97-US15108 19970829. PRIORITY: JP 96-232369 19960902; US 97-827578 19970328.

AB The title products comprise a hydrous kaolin clay surface-treated with a functional silane selected from 0.7-5% S-functional silanes and 0.2-5.0% vinyl-functional silanes. A functional silane is predispersed or emulsified in water by a surfactant for uniform surface treatment. The surfactant should preferably be a nonionic surfactant with HLB value 8-18, and its residual content in the treated clay is very low. The silane treated clays are useful as fillers or extenders in **rubber** compns., particularly those employing silicas and/or carbon blacks. The silanes were typically 3-mercaptopropyltrimethoxysilane, 3-thiocyanatopropyltriethoxysilane, vinyltriethoxysilane, and bis(3-triethoxysilylpropyl)tetrasulfane. Isoprene **rubber** filled with the silane-treated clay showed higher tensile strength and modulus, while processability is comparable with a control filled with untreated clay.

IC ICM C08K009-06
ICS C08K003-34; B60C005-00; B32B019-00
CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)
ST silane treated kaolin clay reinforcing filler; **rubber** reinforcing filler silane treated clay; **tire** reinforcing filler silane treated clay; nonionic surfactant **silane coupler** emulsion

IT Clays, uses
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(kaolin; silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT **Coupling** agents
Nonionic surfactants
**Tires**
(**silane**-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT Silanes
RL: MOA (Modifier or additive use); USES (Uses)
(silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT Chlorinated butyl **rubber**
EPDM **rubber**
Ethylene-propylene **rubber**
Isoprene **rubber**, properties
Neoprene **rubber**, properties
Nitrile **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT 9010-85-9D, chlorinated
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(chlorinated butyl **rubber**, silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT 9010-79-1
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(ethylene-propylene **rubber**, silane-treated clay

products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT 9003-31-0
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(isoprene **rubber**, silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

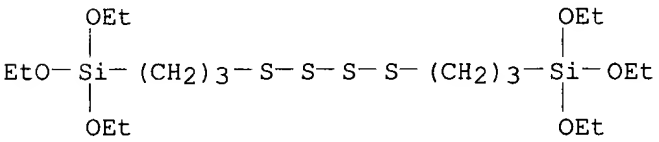
IT 9010-98-4
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(neoprene **rubber**, silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT 9003-18-3
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nitrile **rubber**, silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT 78-08-0, Vinyltriethoxysilane 4420-74-0, 3-Mercaptopropyltrimethoxysilane 9005-07-6, Polyethylene glycol dioleate 9005-64-5, Polyoxyethylene sorbitan monolaurate 9016-45-9, Polyethylene glycol nonylphenyl ether 34708-08-2, 3-Thiocyanatopropyltriethoxysilane **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfane
RL: **MOA (Modifier or additive use)**; USES (Uses)
(silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfane
RL: **MOA (Modifier or additive use)**; USES (Uses)
(silane-treated clay products, manuf. thereof, hydrous kaolin clay slurries, **rubber** compns. and **tires** contg. the same)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



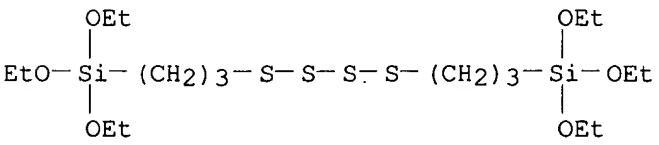
L78 ANSWER 14 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:89255 Document No. 128:116179 **Rubber** compositions and pneumatic **tires** produced therefrom. Araki, Shunji; Yanagisawa, Kazuhiro (Bridgestone Corp., Japan; Araki, Shunji; Yanagisawa, Kazuhiro). PCT Int. Appl. WO 9748267 A2 19971224, 16 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 97-JP3311 19970919. PRIORITY: JP 96-335975 19961216.

AB A **rubber** compn. comprises 100 parts of styrene-butadiene **rubber** or a **rubber** blend including .gtoreq.70 wt.% of styrene-butadiene **rubber** and another diene **rubber** with styrene content 30-40 wt.%, 10-60 parts of a silica filler, and a specified **silane coupling** agent represented by (CnH2n+1)3Si(CH2)mSy(CH2)mSi(CnH2n+1O)3 (n = 1-3; m = 1-9; yr>1), i.e., a bis(alkoxysilylalkyl) polysulfide

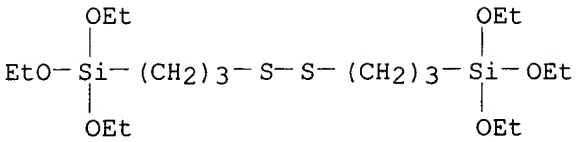
having a polysulfide structure specified in sulfur distribution. Pneumatic **tires** produced by using the **rubber** compn. as tread **rubber** are excellent in the resistance to wet skid and abrasion, and reduced in rolling resistance.

IC C08L021-00
CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)
ST **rubber** styrene butadiene **tire** tread; polysulfide alkoxysilylalkyl coupling agent **rubber tire**
IT Coupling agents
**Tires**
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT Butadiene **rubber**, uses
Styrene-butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT **Tires**
(treads; **rubber** compns. and pneumatic **tires** produced therefrom)
IT 9003-17-2
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, **rubber** compns. and pneumatic **tires** produced therefrom)
IT **40372-72-3**, Si69 **56706-10-6 56706-11-7 180003-65-0 194605-95-3 194605-96-4 194605-97-5 197518-60-8**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT 9003-55-8
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, **rubber** compns. and pneumatic **tires** produced therefrom)
IT **40372-72-3**, Si69 **56706-10-6 56706-11-7 180003-65-0 194605-95-3 194605-96-4 194605-97-5 197518-60-8**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

applicant

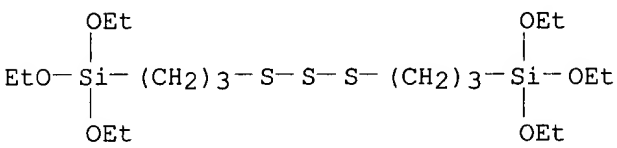


RN 56706-10-6 HCAPLUS
CN 3,14-Dioxa-8,9-dithia-4,13-disilahexadecane, 4,4,13,13-tetraethoxy- (9CI) (CA INDEX NAME)

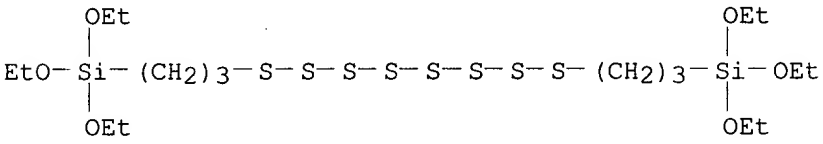


RN 56706-11-7 HCAPLUS
CN 3,15-Dioxa-8,9,10-trithia-4,14-disilaheptadecane,
4,4,14,14-tetraethoxy- (9CI) (CA INDEX NAME)

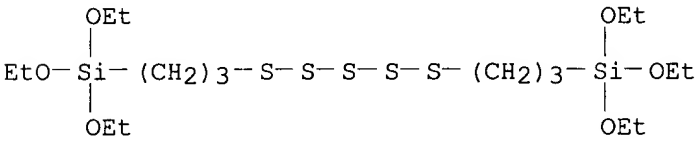
applicant



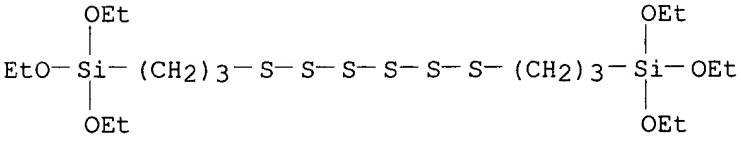
RN 180003-65-0 HCAPLUS
CN 3,20-Dioxa-8,9,10,11,12,13,14,15-octathia-4,19-disiladocosane,
4,4,19,19-tetraethoxy- (9CI) (CA INDEX NAME)



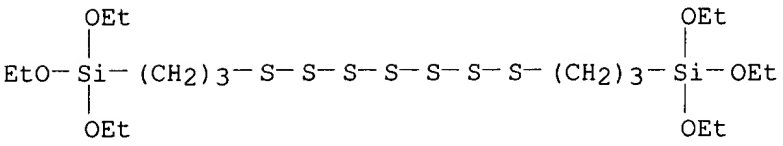
RN 194605-95-3 HCAPLUS
CN 3,17-Dioxa-8,9,10,11,12-pentathia-4,16-disilanonadecane,
4,4,16,16-tetraethoxy- (9CI) (CA INDEX NAME)



RN 194605-96-4 HCAPLUS
CN 3,18-Dioxa-8,9,10,11,12,13-hexathia-4,17-disilaeicosane,
4,4,17,17-tetraethoxy- (9CI) (CA INDEX NAME)

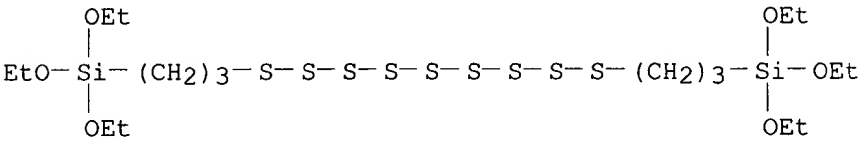


RN 194605-97-5 HCAPLUS
CN 3,19-Dioxa-8,9,10,11,12,13,14-heptathia-4,18-disilaheneicosane,
4,4,18,18-tetraethoxy- (9CI) (CA INDEX NAME)



applicant

RN 197518-60-8 HCAPLUS
CN 3,21-Dioxa-8,9,10,11,12,13,14,15,16-nonathia-4,20-disilatricosane, 4,4,20,20-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 15 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:89254 Document No. 128:116178 **Rubber** compositions and pneumatic **tires** produced therefrom. Araki, Shunji; Yanagisawa, Kazuhiro (Bridgestone Corp., Japan; Araki, Shunji; Yanagisawa, Kazuhiro). PCT Int. Appl. WO 9748266 A2 19971224, 21 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 97-JP3310 19970919. PRIORITY: JP 96-335974 19961216.

AB A **rubber** compn. comprises 100 parts of a **rubber** blend including .gtoreq.20 of a 1,3-butadiene-arom. vinyl compd. copolymer prepd. by using org. lithium compds. as initiators and having a Tg of -50.degree. or above and .ltoreq.80 parts of another diene **rubber**, 10-80 parts of a silica filler, 20-80 parts of carbon black, and 1-20 wt.%, based on the silica, and a specified **silane coupling** agent represented by (CnH2n+1)3Si(CH2)mSy(CH2)mSi(CnH2n+1O)3 (n = 1-3; m = 1-9; yr>1), i.e., a bis(alkoxysilylalkyl) polysulfide having a polysulfide structure specified in sulfur distribution. Pneumatic **tires** produced by using the **rubber** compn. as tread **rubber** are excellent in the resistance to wet skid and abrasion, and reduced in rolling resistance.

IC C08L021-00
CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)
ST **rubber** styrene butadiene natural **tire** tread; polysulfide alkoxysilylalkyl coupling agent **rubber** **tire**
IT Styrene-butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(butadienyl-tin bond-contg.; **rubber** compns. and pneumatic **tires** produced therefrom)
IT Coupling agents
**Tires**
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT Natural **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT Carbon black, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(**rubber** compns. and pneumatic **tires** produced therefrom)

IT **Tires**
(treads; **rubber** compns. and pneumatic **tires** produced therefrom)

IT **40372-72-3**, Si69 **56706-10-6 56706-11-7 180003-65-0 194605-95-3 194605-96-4 194605-97-5 197518-60-8**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **rubber** compns. and pneumatic **tires** produced therefrom)

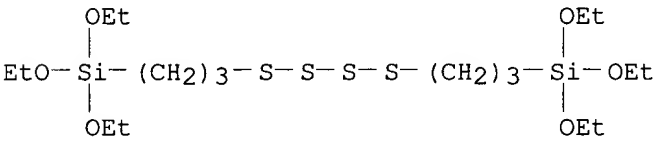
IT 1174-72-7, Tetraphenoxysilane 3439-97-2, Methyltriphenoxysilane
RL: MOA (Modifier or additive use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)

IT 7631-86-9, Nipsil AQ, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)

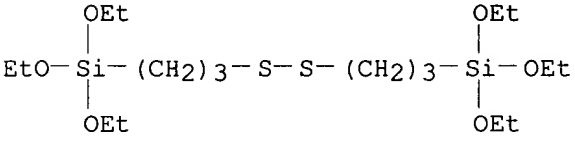
IT 9003-55-8
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, butadienyl-tin bond-contg.; **rubber** compns. and pneumatic **tires** produced therefrom)

IT **40372-72-3**, Si69 **56706-10-6 56706-11-7 180003-65-0 194605-95-3 194605-96-4 194605-97-5 197518-60-8**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **rubber** compns. and pneumatic **tires** produced therefrom)

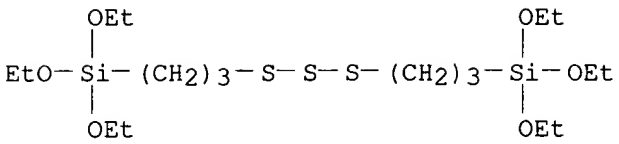
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



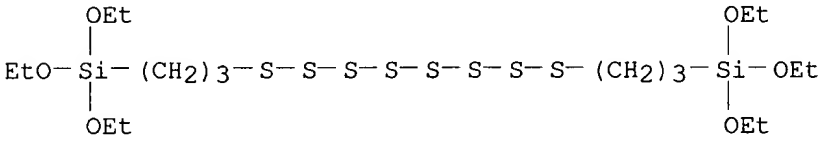
RN 56706-10-6 HCAPLUS
CN 3,14-Dioxa-8,9-dithia-4,13-disilahexadecane, 4,4,13,13-tetraethoxy- (9CI) (CA INDEX NAME)



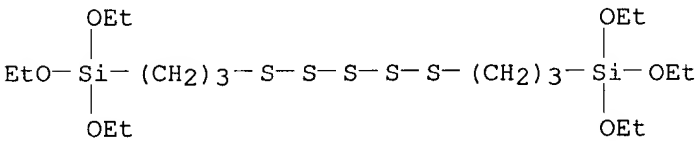
RN 56706-11-7 HCAPLUS
CN 3,15-Dioxa-8,9,10-trithia-4,14-disilaheptadecane, 4,4,14,14-tetraethoxy- (9CI) (CA INDEX NAME)



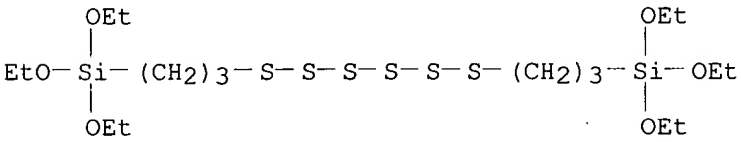
RN 180003-65-0 HCAPLUS
CN 3,20-Dioxa-8,9,10,11,12,13,14,15-octathia-4,19-disiladocosane, 4,4,19,19-tetraethoxy- (9CI) (CA INDEX NAME)



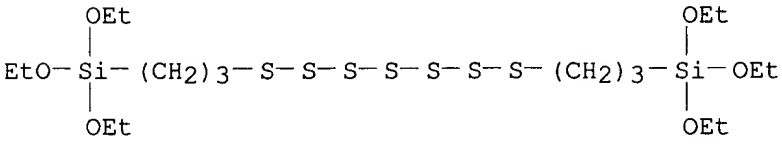
RN 194605-95-3 HCAPLUS
CN 3,17-Dioxa-8,9,10,11,12-pentathia-4,16-disilanonadecane, 4,4,16,16-tetraethoxy- (9CI) (CA INDEX NAME)



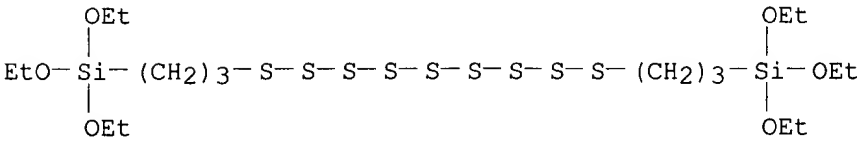
RN 194605-96-4 HCAPLUS
CN 3,18-Dioxa-8,9,10,11,12,13-hexathia-4,17-disilaeicosane, 4,4,17,17-tetraethoxy- (9CI) (CA INDEX NAME)



RN 194605-97-5 HCAPLUS
CN 3,19-Dioxa-8,9,10,11,12,13,14-heptathia-4,18-disilaheneicosane, 4,4,18,18-tetraethoxy- (9CI) (CA INDEX NAME)



RN 197518-60-8 HCAPLUS
CN 3,21-Dioxa-8,9,10,11,12,13,14,15,16-nonathia-4,20-disilatricosane, 4,4,20,20-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 16 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:89253 Document No. 128:116177 **Rubber** compositions and pneumatic **tires** produced therefrom. Araki, Shunji; Yanagisawa, Kazuhiro (Bridgestone Corp., Japan; Araki, Shunji; Yanagisawa, Kazuhiro). PCT Int. Appl. WO 9748265 A2 19971224, 17 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 97-JP3309 19970919. PRIORITY: JP 96-335973 19961216.

AB A **rubber** compn. comprises 100 parts of a diene **rubber** contg. .gtoreq.15 wt.% of a polybutadiene **rubber**, 10-80 parts of silica, and 1-20 wt.% based on the silica, of a specified **silane coupling** agent, i.e., a bis(alkoxysilylalkyl) polysulfide having a polysulfide structure specified in sulfur distribution, contains closed cells after being vulcanized, and exhibits a good processability in **tire** prodn. Pneumatic **tires** produced therefrom are excellent in running performance on iced or snowed roads and in abrasion resistance.

IC C08L021-00

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)

ST butadiene natural **rubber tire** tread; polysulfide alkoxysilylalkyl coupling agent **rubber tire**

IT Carbon black, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Seast 9H; **rubber** compns. and pneumatic **tires** produced therefrom)

IT cis-1,4-Butadiene **rubber**
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(Ubepol BR 150L; **rubber** compns. and pneumatic **tires** produced therefrom)

IT Coupling agents
**Tires**
(**rubber** compns. and pneumatic **tires** produced therefrom)

IT Natural **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)

IT **Tires**
(treads; **rubber** compns. and pneumatic **tires** produced therefrom)

IT **40372-72-3**, Si 69 **56706-10-6 56706-11-7 180003-65-0 194605-95-3 194605-96-4 194605-97-5 197518-60-8**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)

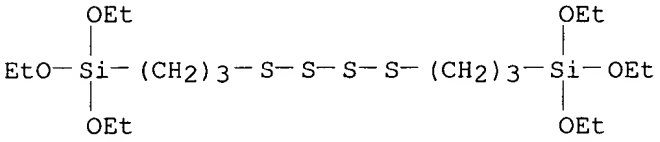
IT 7631-86-9, Nipsil AQ, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)

IT 9003-17-2

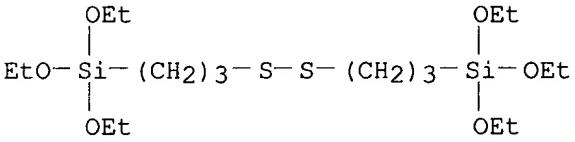
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, Ubepol BR 150L; **rubber** compns. and pneumatic **tires** produced therefrom)

IT **40372-72-3**, Si 69 **56706-10-6 56706-11-7 180003-65-0 194605-95-3 194605-96-4 194605-97-5 197518-60-8**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)

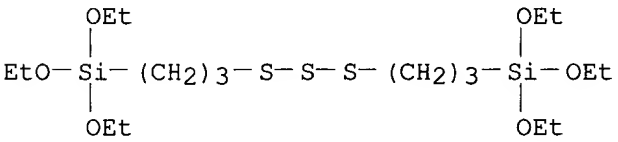
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



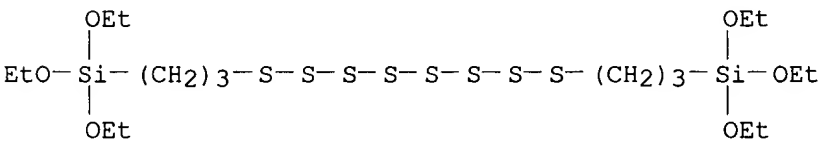
RN 56706-10-6 HCAPLUS
CN 3,14-Dioxa-8,9-dithia-4,13-disilahexadecane, 4,4,13,13-tetraethoxy- (9CI) (CA INDEX NAME)



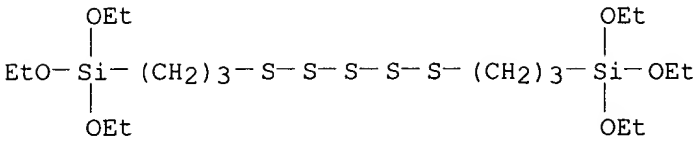
RN 56706-11-7 HCAPLUS
CN 3,15-Dioxa-8,9,10-trithia-4,14-disilaheptadecane, 4,4,14,14-tetraethoxy- (9CI) (CA INDEX NAME)



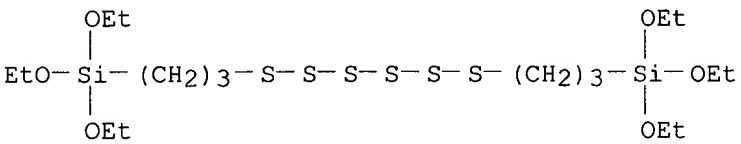
RN 180003-65-0 HCAPLUS
CN 3,20-Dioxa-8,9,10,11,12,13,14,15-octathia-4,19-disiladocosane, 4,4,19,19-tetraethoxy- (9CI) (CA INDEX NAME)



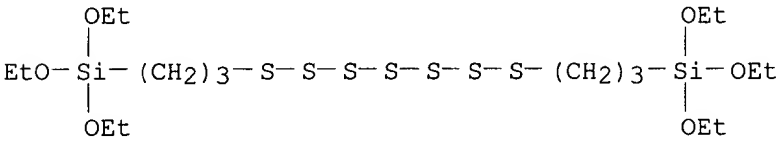
RN 194605-95-3 HCAPLUS
CN 3,17-Dioxa-8,9,10,11,12-pentathia-4,16-disilanonadecane, 4,4,16,16-tetraethoxy- (9CI) (CA INDEX NAME)



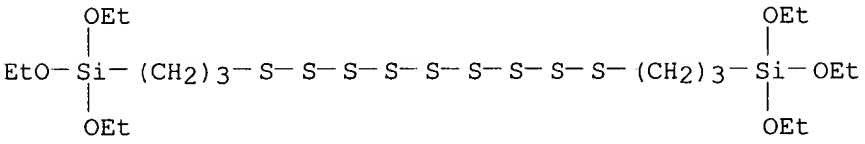
RN 194605-96-4 HCAPLUS
CN 3,18-Dioxa-8,9,10,11,12,13-hexathia-4,17-disilaeicosane, 4,4,17,17-tetraethoxy- (9CI) (CA INDEX NAME)



RN 194605-97-5 HCAPLUS
CN 3,19-Dioxa-8,9,10,11,12,13,14-heptathia-4,18-disilaheneicosane, 4,4,18,18-tetraethoxy- (9CI) (CA INDEX NAME)



RN 197518-60-8 HCAPLUS
CN 3,21-Dioxa-8,9,10,11,12,13,14,15,16-nonathia-4,20-disilatricosane, 4,4,20,20-tetraethoxy- (9CI) (CA INDEX NAME)

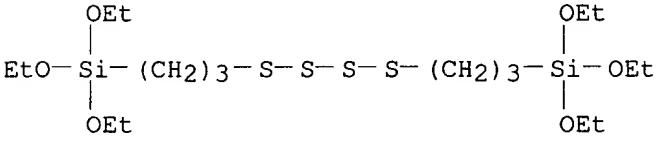


L78 ANSWER 17 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:89252 Document No. 128:116176 **Rubber** compositions and pneumatic **tires** produced therefrom. Araki, Shunji; Yanagisawa, Kazuhiro; Motofusa, Shinichi (Bridgestone Corp., Japan; Araki, Shunji; Anagisawa, Kazuhiro; Motofusa, Shinichi). PCT Int. Appl. WO 9748264 A2 19971224, 24 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 97-JP3308 19970919. PRIORITY: JP 96-319399 19961129.

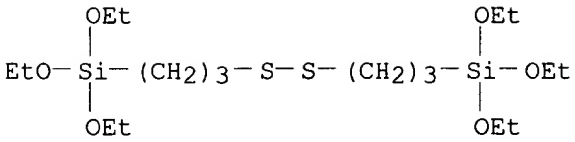
AB A **rubber** compn. comprises 100 parts of a natural **rubber** and/or a synthetic diene **rubber**, 10-85 parts of silica, and 1-20 wt.%, based on the silica, of a polysulfide **silane coupling** agent which is specified in sulfur distribution and reduced in the content of high-polysulfide components and is prepd. by the reaction of a polysulfide **silane coupling** agent specified in sulfur distribution with a phosphorus (III) compd. to reduce the sulfide content of the coupling agent. Pneumatic **tires** produced therefrom are excellent in the prevention of heat buildup.

IC C08L021-00

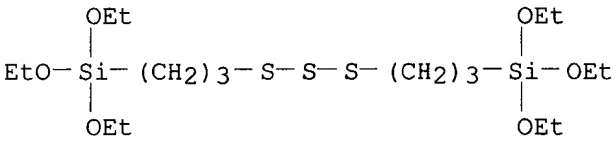
CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)
ST **rubber** natural styrene butadiene **tire** tread; polysulfide alkoxysilylalkyl coupling agent **rubber** **tire**
IT Coupling agents
(prepn. of polysulfide **silane coupling** agents for **rubber** compns.)
IT **Tires**
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT Natural **rubber**, uses
Styrene-butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT Carbon black, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT **Tires**
(treads; **rubber** compns. and pneumatic **tires** produced therefrom)
IT **40372-72-3**, Si69 **56706-10-6 56706-11-7** **194605-95-3 194605-96-4**
RL: **MOA (Modifier or additive use)**; RCT (Reactant); USES (Uses)
(prepn. of polysulfide **silane coupling** agents for **rubber** compns.)
IT 122-52-1, Triethylphosphite 603-35-0, Triphenylphosphine, reactions 18541-18-9 **180003-65-0 194605-97-5**
RL: RCT (Reactant)
(prepn. of polysulfide **silane coupling** agents for **rubber** compns.)
IT 7631-86-9, Nipsil AQ, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. and pneumatic **tires** produced therefrom)
IT 9003-55-8
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, **rubber** compns. and pneumatic **tires** produced therefrom)
IT **40372-72-3**, Si69 **56706-10-6 56706-11-7** **194605-95-3 194605-96-4**
RL: **MOA (Modifier or additive use)**; RCT (Reactant); USES (Uses)
(prepn. of polysulfide **silane coupling** agents for **rubber** compns.)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



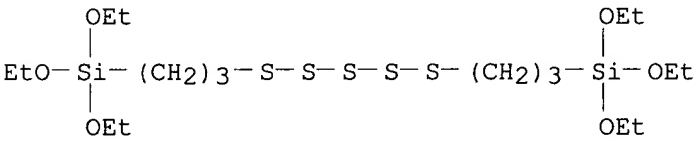
RN 56706-10-6 HCAPLUS
CN 3,14-Dioxa-8,9-dithia-4,13-disilahexadecane, 4,4,13,13-tetraethoxy- (9CI) (CA INDEX NAME)



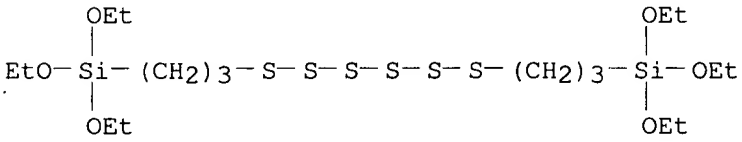
RN 56706-11-7 HCAPLUS
CN 3,15-Dioxa-8,9,10-trithia-4,14-disilaheptadecane,
4,4,14,14-tetraethoxy- (9CI) (CA INDEX NAME)



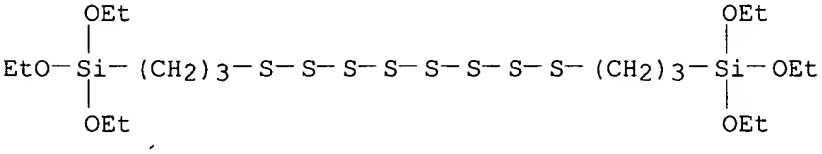
RN 194605-95-3 HCAPLUS
CN 3,17-Dioxa-8,9,10,11,12-pentathia-4,16-disilanonadecane,
4,4,16,16-tetraethoxy- (9CI) (CA INDEX NAME)



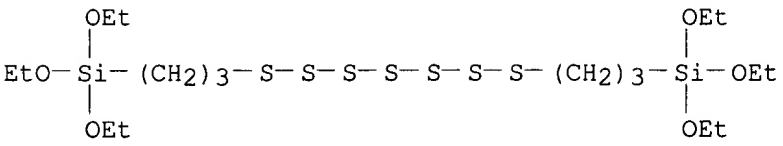
RN 194605-96-4 HCAPLUS
CN 3,18-Dioxa-8,9,10,11,12,13-hexathia-4,17-disilaeicosane,
4,4,17,17-tetraethoxy- (9CI) (CA INDEX NAME)



IT **180003-65-0 194605-97-5**
RL: RCT (Reactant)
(prepn. of polysulfide **silane coupling** agents
for **rubber** compns.)
RN 180003-65-0 HCAPLUS
CN 3,20-Dioxa-8,9,10,11,12,13,14,15-octathia-4,19-disiladocosane,
4,4,19,19-tetraethoxy- (9CI) (CA INDEX NAME)



RN 194605-97-5 HCAPLUS
CN 3,19-Dioxa-8,9,10,11,12,13,14-heptathia-4,18-disilaheneicosane,
4,4,18,18-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 18 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:25445 Document No. 128:103307 **Rubber** compositions containing epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degradation by heat. Yamanaka, Eiji; Matsuda, Akira (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10001564 A2 19980106 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-172871 19960613.

AB The compns. contain .gtoreq.5% (on **rubber** component) epoxidized butadiene **rubber** and/or epoxidized butadiene-styrene **rubber** with the degree of epoxidn. 4-85 mol% and 5-85 parts silica per 100 parts **rubber** and optionally have silica compd. coupling agent content .ltoreq.8.5 parts per 100 parts **rubber** and are useful for **tire** treads or **tire** carcasses. Thus, 50 parts SBR (JSR 1500), 50 parts epoxidized 95:5 butadiene-styrene copolymer **rubber** with degree of epoxidn. 18 mol%, 8 parts SI 69 (**silane coupler**), 80 parts silica, and other additives contg. S were kneaded to give a compn. showing 300% modulus (index) 107 and small change of tensile strength and elongation after 24 h at 100.degree. in air.

IC ICM C08L009-00
ICS C08K003-36; C08K005-54; C08L063-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST epoxidized butadiene styrene **rubber** SBR blend; **rubber** epoxidized butadiene copolymer blend; silica filler epoxidized butadiene copolymer **rubber**; heat resistance epoxidized SBR **rubber** blend

IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(JSR 1500; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT Butadiene **rubber**, properties
RL: MOA (Modifier or additive use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(epoxidized; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT Epoxidation
Heat-resistant materials
Polymer thermal degradation
(**rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT **Rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT Polymer blends
RL: PRP (Properties); TEM (Technical or engineered material use);

USES (Uses)
(**rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT Coupling agents
(silica compds.; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT 9003-17-2
RL: MOA (Modifier or additive use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(butadiene **rubber**, epoxidized; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

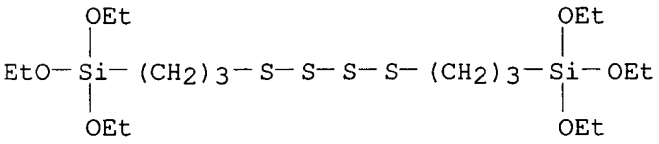
IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT **40372-72-3**, SI 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**silane coupler**; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, JSR 1500; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

IT **40372-72-3**, SI 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**silane coupler**; **rubber** compns. contg. epoxidized butadiene **rubber** or epoxidized butadiene-styrene **rubber** with improved resistance to degrdn. by heat)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 19 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1998:21444 Document No. 128:76466 Silica-containing **rubber** compositions, their preparation and their use. Sattelmeyer, Richard; Wallenwein, Siegfried; Burkhart, Thomas (Vianova Resins Gmbh, Germany). Eur. Pat. Appl. EP 814123 A1 19971229, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI. (German). CODEN: EPXXDW. APPLICATION: EP 97-109369 19970610. PRIORITY: DE 96-19624432 19960619.

AB **Rubber** compns. contain .gtoreq.1 polar **rubber**, .gtoreq.1 nonpolar **rubber**, .gtoreq.1 phenolic resin, .gtoreq.1 reinforcing additive, finely divided SiO2, and other additives. The compns. are suitable for **tire** treads with

low rolling resistance and high skid resistance. An example contained SBR 68, butadiene **rubber** 20, nitrile **rubber** 12, silica 55, **silane coupler** 10, and Alnovol PN 320 (phenolic resin) 1.5 parts and had mech. loss (tan .delta.) 0.12 at 70.degree. (compared to 0.19 for a compn. without the phenolic resin or coupler), indicating a low rolling resistance.

IC ICM C08L021-00
ICS C08K003-36; B60C001-00

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)

ST **rubber** compn silica contg **tire** tread; phenolic resin **rubber** compn **tire** tread

IT Coupling agents
(in **rubber** compns. for **tire** treads with improved performance)

IT Phenolic resins, uses
Phenolic resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(in **rubber** compns. for **tire** treads with improved performance)

IT Nitrile **rubber**, uses
Styrene-butadiene **rubber**, uses
cis-1,4-Butadiene **rubber**
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(in **rubber** compns. for **tire** treads with improved performance)

IT Novolaks
RL: MOA (Modifier or additive use); USES (Uses)
(resorcinol-based; in **rubber** compns. for **tire** treads with improved performance)

IT **Tires**
(treads; **rubber** compns. for **tire** treads with improved performance)

IT 1333-16-0D, Bisphenol F, phenolic resins 7631-86-9, Ultrasil VN 3, uses 9003-35-4, Alnovol PN 320 **40372-72-3**, X 50S 167749-15-7, Alnovol VPN 1755
RL: **MOA (Modifier or additive use)**; USES (Uses)
(in **rubber** compns. for **tire** treads with improved performance)

IT 9003-18-3
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(nitrile **rubber**, in **rubber** compns. for **tire** treads with improved performance)

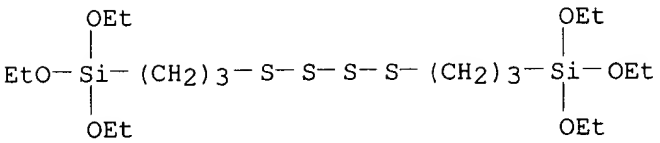
IT 9003-55-8
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, in **rubber** compns. for **tire** treads with improved performance)

IT 9003-17-2
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, in **rubber** compns. for **tire** treads with improved performance)

IT **40372-72-3**, X 50S
RL: **MOA (Modifier or additive use)**; USES (Uses)
(in **rubber** compns. for **tire** treads with improved performance)

RN 40372-72-3 HCAPLUS

CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 20 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:772438 Document No. 128:62684 **Rubber** compositions for **tire** treads for snowy icy roads and unpaved roads. Umifuji, Hiroyuki; Takasawa, Hisayoshi; Saito, Hiroyuki; Takai, Kenichi; Saito, Takeo (Yokohama Rubber Co., Ltd., Japan; Nippon Telegraph and Telephone Corp.; Affty K. K.). Jpn. Kokai Tokkyo Koho JP 09309976 A2 19971202 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-127339 19960522.

AB **Rubber** compns. contain 100 parts **rubber** contg. .gtoreq.1 diene **rubber** and 1-20 parts F-terminated PTFE having mol. wt. 500-10,000 and granular diam. <10 .mu.m and the vulcanizates have JIS A hardness at 20.degree. 45-75, difference of JIS A hardness at 20.degree. and 0.degree. 0-15, break strength >13 MPa, and break elongation >450%. Thus, a **rubber** compn. contained RSS I **rubber** 60, Nipol BR 1220 40, carbon black 75, an antioxidant 2, a microcryst. wax 1, ZnO 3, stearic acid 1, dioctyl phthalate 15, a process oil 15, an accelerator 1.2, S 2, and PTFE 1 part.

IC ICM C08L009-00
ICS B60C001-00; C08L007-00; C08L009-00; C08L027-18

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST **tire** tread diene **rubber** PTFE

IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Nipol 9828, Nipol 1502; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)

IT cis-1,4-Butadiene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Nipol BR 1220; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)

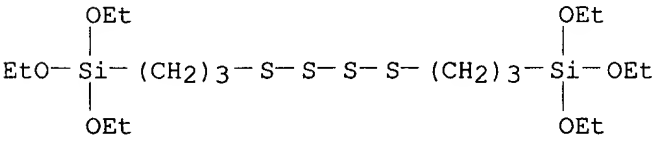
IT Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(RSS I; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)

IT **Silanes**
RL: MOA (Modifier or additive use); USES (Uses)
(**coupling** agents; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fluorine-terminated, F-terminated; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)

IT Polymer blends
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)

IT **Coupling** agents
(**silanes**; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)
IT **Tires**
(treads; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)
IT 9002-84-0D, PTFE, fluorine-terminated
RL: MOA (Modifier or additive use); USES (Uses)
(F-terminated; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(Si 69; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)
IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, Nipol 9828, Nipol 1502; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)
IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, Nipol BR 1220; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(Si 69; **rubber** compns. contg. diene **rubber** and fluorine-terminated PTFE for **tire** treads for snowy icy roads and unpaved roads)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 21 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:720133 Document No. 127:347494 Diene **rubber** composition for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road. Matsuo, Toshiro (Sumitomo Rubber Industries Ltd., Japan). Eur. Pat. Appl. EP 803535 A2 19971029, 11 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 97-302717 19970421. PRIORITY: JP 96-100022 19960422.
AB Title **rubber** compns. comprise .gtoreq.1 diene **rubber** selected from natural **rubber**, butadiene **rubber**, styrene-butadiene **rubber**, isoprene **rubber** and ethylene-propylene-diene terpolymer; carbon black having av. particle size .gtoreq.20 nm, compression di-Bu phthalate (DBP) oil absorption no. .ltoreq.120 mL/100 g and cetyl

trimethylammonium bromide (CTAB) sp. surface area .ltoreq.130 m2/g; pptd. silica having DBP oil absorption no. .gtoreq.200 mL/100 g and Brunauer Emmett Teller nitrogen adsorption sp. surface area .ltoreq.180 m2/g; and a **silane coupling** agent in calcd. amt. Thus, natural **rubber** 70, butadiene **rubber** (BR-150L) 30, pptd. silica (VN 3) 10 bis(triethoxysilylpropyl)tetrasulfide coupling agent 1, carbon black (FEF) 40, and oil were mixed, cooled and then mixed with a vulcanizer at .ltoreq.100.degree. to give a **tire** showing rolling resistance 98, cracking growth .gtoreq.1 million times/min hardness 54.

IC ICM C08L021-00
ICS C08K003-04; C08K003-36; B60C001-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST diene **rubber tire** sidewall rolling resistance; natural butadiene **rubber tire** sidewall; styrene butadiene **rubber tire** sidewall; EPDM **rubber tire** sidewall; isoprene **rubber tire** sidewall; carbon black silica diene **rubber tire**; **silane coupling** agent diene **rubber tire**

IT cis-1,4-Butadiene **rubber**
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(BR 150L; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT EPDM **rubber**
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(Esprene 586; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT Styrene-butadiene **rubber**, uses
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(JSR-SL 574; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT Polymer blends
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(diene **rubbers**; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT Silicates, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fillers; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT **Tires**
(**rubber** compn. for)

IT Clay fillers
Coupling agents
Fillers
(**rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT Isoprene **rubber**, uses
Natural **rubber**, uses
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(**rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT **Tires**
(sidewalls; **rubber** compn. for)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(FK 700, filler; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT **40372-72-3**, 3,3'-Bis(triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT 14807-96-6, Talc, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT 9003-31-0
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(isoprene **rubber**, **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

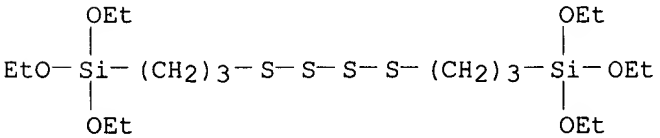
IT 9003-55-8
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(styrene-butadiene **rubber**, JSR-SL 574; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT 9003-17-2
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(cis-1,4-Butadiene **rubber**, BR 150L; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

IT **40372-72-3**, 3,3'-Bis(triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **rubber** compn. for **tire** sidewalls, and **tires** therefrom with low rolling resistance, good wear resistance and grip properties on wet road)

RN 40372-72-3 HCAPLUS

CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 22 OF 70 HCAPLUS COPYRIGHT 1998 ACS

1997:682275 Document No. 127:308334 Polysiloxane compositions having good storage stability and silica-**rubber** compounds with good vulcanization property containing them. Ishikawa, Kazunori; Yatsuyanagi, Fumito; Kawazura, Tetsuji (Yokohama Rubber Co., Ltd., Japan). Eur. Pat. Appl. EP 801112 A2 19971015, 25 pp. DESIGNATED STATES: R: DE, FR, IT. (English). CODEN: EPXXDW. APPLICATION: EP 97-105810 19970408. PRIORITY: JP 96-87950 19960410; JP 96-212707 19960812; JP 96-228346 19960829; JP 97-1938 19970109.

AB The title compns. comprise (A) H polysiloxanes partially bearing C1-18 alkoxy, hydrocarbyl or acyloxy groups in place of original SiH groups for reducing H liberation in the presence of Pt catalysts, and (B) .gtoreq.1 ppm N, P, S, Sn or As compd. or an acetylene alc. as storage stabilizer. **Rubber** compds. useful for **tire** treads contain **rubbers**, silica fillers, and compounding agents based on the modified H polysiloxane compns. above and waxes. Thus, adding 50.5 g EtOH to 100 .mu.L of 1% iso-Pr alc. soln. of chloroplatinic acid, heating to 70.degree., dropping dropwise the resulting soln. to 100 g Me H polysiloxane over 2 h and reacting for 4 h gave a Me H polysiloxane partially bearing EtO groups, a mixt. (M) of 100 parts of which with 10 ppm .gamma.-mercaptopropyltrimethoxysilane had good storage stability. Compounding a natural **rubber** 50.0 with SBR **rubber** 50.0, silica 50.0, diethylene glycol 2.5, a **silane** **coupler** 2.5, a 1:1 mixt. of wax and M above 5.0, carbon black 2.5, ZnO 3.0, stearic acid 1.0 and antioxidant 1.0 part gave a **rubber** compd. that could be vulcanized by S to **rubber** with good phys. properties.

IC ICM C08L083-06
ICS C08L007-00; C08L009-00; C08K003-36; C08K005-54; C08K009-06; C08K005-00

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)

ST **rubber** compounding agent alkoxy hydrogen polysiloxane; storage stability alkoxy hydrogen polysiloxane; **tire** tread **rubber** compounding polysiloxane; wax mixt modified polysiloxane compounding **rubber**

IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Nipol; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT Alcohols, uses
RL: MOA (Modifier or additive use); USES (Uses)
(alkynyl, coupler/storage stabilizer; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT Waxes
RL: MOA (Modifier or additive use); USES (Uses)
(compounding agents with modified polysiloxanes; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT **Silanes**
RL: MOA (Modifier or additive use); USES (Uses)
(**coupling** agents; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT Butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(of 1,4-configuration, Nipol 1220; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT Polysiloxanes, preparation
RL: IMF (Industrial manufacture); MOA (Modifier or additive use);

PREP (Preparation); USES (Uses)
(partially dehydro-alkoxylated products; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT Coupling agents
(polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, of 1,4-configuration, Nipol 1220; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT 4420-74-0, .gamma.-Mercaptopropyltrimethoxysilane **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide 113946-60-4
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler/storage stabilizer; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fillers; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT 64-17-5DP, Ethanol, partially dehydro-alkoxylated products with polysiloxanes 2768-02-7DP, Trimethoxyvinylsilane, partially reaction products with polysiloxanes 6144-04-3DP, .alpha.-Methylstyrene dimer, partially dehydro-alkoxylated products with polysiloxanes 26403-67-8DP, partially dehydro-alkoxylated 31900-57-9DP, Dimethylsilanediol polymer, trimethylsilyl-terminated, partially dehydro-alkoxylated or/and hydrocarbyloxylated or silylalkylated
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

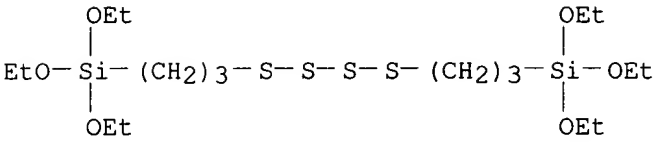
IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, Nipol; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT 77-58-7, Dibutyltin dilaurate 546-68-9, Tetraisopropyl titanate 17927-72-9, Orgatix TC-100
RL: CAT (Catalyst use); USES (Uses)
(vulcanization catalysts; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler/storage stabilizer; polysiloxane compns. having good storage stability and silica-**rubber** compds. with good vulcanization property contg. them)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane,

4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 23 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:678692 Document No. 127:332681 **Rubber** compositions for pneumatic **tire** treads with good wet skid resistance and rolling property. Ito, Kuniko; Hamada, Tatsuro (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09268238 A2 19971014 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-78661 19960401.

AB The compns. comprise (A) 100 parts a blend of diene **rubbers** and >30% isoprene polymer or/and isoprene-styrene copolymer prepd. in the presence of org. Li compds. as initiators, (B) 20-120 parts silica, (C) <100 parts carbon black and (D) 0.2-10 parts specified S-contg. **silane couplers**. Thus, polymg. isoprene in the presence of BuLi gave a living polyisoprene, 70 parts of which was combined with 30 parts natural ribber, HAF carbon black 10, Nipsil VN3 40, bis(3-triethoxysilylpropyl)tetrasulfide 4.0 parts and other ordinary additives to give a title compn.

IC ICM C08L009-00
ICS B60C001-00; C08K003-04; C08K003-36; C08K005-54

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST antiskid pneumatic **tire** tread **rubber** compn; isoprene living polymer **rubber tire** tread; natural **rubber** blend **tire** tread antiskid; diene **rubber** blend **tire** tread antiskid; anionic living polymn lithium catalyst

IT **Silanes**
RL: MOA (Modifier or additive use); USES (Uses)
(**couplers**; **rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT Isoprene **rubber**, properties
Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT Isoprene-styrene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(silane-modified; **rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT **Tires**
(treads; **rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
119388-54-4
RL: **MOA (Modifier or additive use)**; USES (Uses)
(couplers; **rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT 9003-31-0

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(isoprene **rubber**, **rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

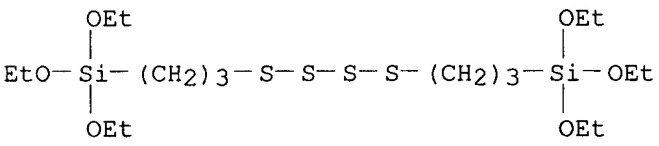
IT 25038-32-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(isoprene-styrene **rubber**, silane-modified; **rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT 7631-86-9, Nipsil VN3, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT 838-86-8D, Monochloromethyldiphenoxysilane, reaction products with living isoprene-styrene copolymer 1174-72-7D, Tetraphenoxysilane, reaction products with living isoprene-styrene copolymer 2031-67-6D, Methyltriethoxysilane, reaction products with living isoprene-styrene copolymer 38162-51-5, Polyisoprene lithium 72536-95-9 72536-95-9D, reaction products with silane modifiers 93884-40-3D, Vinyltris(2-ethylhexyloxy)silane, reaction products with living isoprene-styrene copolymer
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(couplers; **rubber** compns. for pneumatic **tire** treads with good wet skid resistance and rolling property)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 24 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:632456 Document No. 127:279438 Granular silica gel/alumina-containing **rubber tire** tread compositions with improved skid resistance. Teratani, Hiroyuki; Toyoda, Masaki (Bridgestone Corporation, Japan). Eur. Pat. Appl. EP 795578 A2 19970917, 13 pp. DESIGNATED STATES: R: DE, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 97-301596 19970311. PRIORITY: JP 96-52982 19960311.

AB The title compns. contain 3-30 parts porous grains having JIS K 6301 C hardness .gtoreq.75, av. grain size 5-2000 m.mu., av. surface pore size 40-1000 .ANG., and BET sp. surface area 10-800 m2/g (based on 100 parts **rubber**). Natural/butadiene **rubber** **tire** composites compounded with Al(OH)3 and/or silica gel granules with the above specifications, along with **silane** **coupling** agents, have good ice and wet skid resistance without impairing durability..

IC ICM C08K007-00
ICS C08L021-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST alumina granule **rubber tire** tread; silica

granule **rubber tire** tread; butadiene **rubber tire** tread; natural **rubber tire** tread; skid resistance **tire** compounding

IT Coupling agents
(granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

IT Silica gel, uses
RL: MOA (Modifier or additive use); USES (Uses)
(granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

IT Butadiene **rubber**, properties
Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

IT **Tires**
(treads; granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

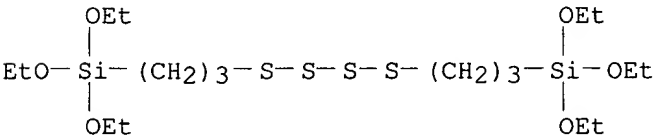
IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

IT **40372-72-3** 119388-54-4
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

IT 1344-28-1, Alumina, uses
RL: MOA (Modifier or additive use); USES (Uses)
(granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

IT **40372-72-3**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; granular silica gel/alumina-contg. **rubber tire** tread compns. with improved skid resistance)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 25 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:589139 Document No. 127:221826 Retreaded **tire** assembly and spliced **tire** tread and blowout-resistant solventless silica-reinforced **elastomeric** adhesive compositions therefor. Majumdar, Ramendra Nath; Lukich, Lewis Timothy; Duncan, Thomas Edwin; Hahn, Bruce Raymond (Goodyear Tire and Rubber Co., USA). Eur. Pat. Appl. EP 791451 A1 19970827, 10 pp. DESIGNATED STATES: R: BE, CH, DE, FR, GB, IT, LI, NL. (English). CODEN: EPXXDW. APPLICATION: EP 97-102135 19970211. PRIORITY: US 96-603141 19960220.

AB Title adhesive compn. or cushion layer having good blowout resistance and a very low, final blowout test temp., comprises a

blend of .gtoreq.1 **rubber**, silica, a coupling agent (preferably a sulfur-contg. alkylene alkoxysilane), low or nil amts. of carbon black, and optionally a tackifier. The **elastomeric** adhesive compn. can be utilized to bond various **rubber** layers, e.g., a cured or uncured **tire** tread to a cured **tire** casing. Thus, butadiene **rubber** 60, natural **rubber** 40, silica 50, coupling agent [50/50 bis-(3-triethoxysilylpropyl) tetrasulfide (Si 69) and HAF carbon black] 8, phenolic resin tackifier (formaldehyde-nonylphenol copolymer) 8 parts and other additives were mixed and extruded to give a 40 mil-thick sheet showing blowout time 40-45 min and blowout temp. 139.degree. and cured bond strength (buffed cured carcass bonded to uncured tread) 281 lb/in.

IC ICM B29D030-56
ICS C08J005-12; C09J121-00; B60C001-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST silica reinforced solventless **elastomeric** adhesive; adhesive **rubber tire** retread; sulfur alkylene alkoxy **silane coupling** agent; butadiene natural **rubber tire** retread adhesive; ethoxysilylpropyl sulfide coupling agent adhesive compn

IT Natural **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber** blends adhesives; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

IT Butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(natural **rubber** blends adhesives; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

IT **Tires**
(retreads; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

IT Adhesives
Coupling agents
Fillers
Tackifiers
(solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

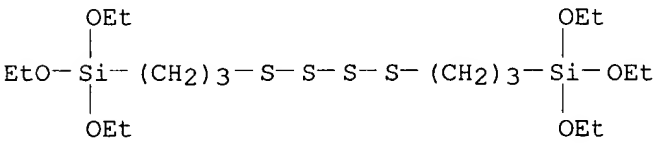
IT Alkoxy **silanes**
RL: MOA (Modifier or additive use); USES (Uses)
(sulfur-contg., alkylene-, **coupling** agents; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

IT Phenolic resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(tackifiers; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

IT **Tires**
(treads; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

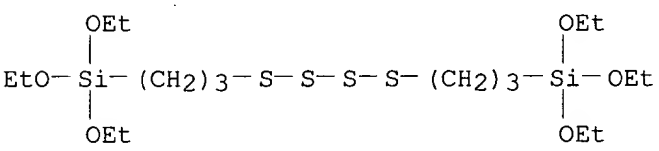
IT 9003-17-2
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, natural **rubber** blends adhesives; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)
IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)
IT 9040-65-7, Formaldehyde-nonylphenol copolymer
RL: MOA (Modifier or additive use); USES (Uses)
(tackifier; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; solventless silica-reinforced **elastomeric** adhesive compns. with good blowout resistance for **tires**)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



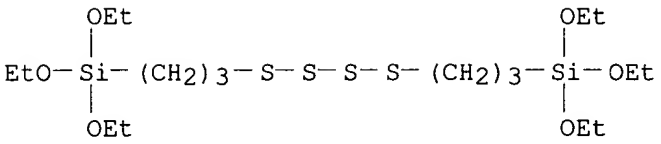
L78 ANSWER 26 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:564904 Document No. 127:162995 Pneumatic **tires** having high-speed durability and control stability. Nakamura, Eiji; Ohashi, Masayuki (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09176384 A2 19970708 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 96-232867 19960903. PRIORITY: JP 95-300416 19951026.
AB Title **tires** contain base **rubbers** [locating between the tread cap **rubbers** (contg. .gtoreq.28% styrene) and belt coating **rubbers**] which are prepd. from compns. contg. 100 parts **rubbers** contg. .gtoreq.70% SBR, 40-100 parts 20-80% SiO2 and carbon black (having DBP adsorption of 100-200 mL/100g, N adsorption sp. surface area of 50-150 m2/g), and 5-20:100 **silane coupler**/SiO2, and show hardness (Hd) .gtoreq.65 and dynamic storage modulus (E') .gtoreq.120 .times. 106 dyne/cm2 after vulcanization. A 20:40:40 natural **rubber** /Tufdene 2530/SBR 1500-based compn. and a JSR-T 0120 compn. were used for the above base and cap **rubber**, resp.
IC ICM C08L009-06
ICS B60C001-00; C08K003-04; C08K003-36; B60C011-00; C09C001-48
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
ST **tire** control stability SBR base compn; durability high speed **tire** SBR base
IT Styrene-butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(Tufdene 2530; high SBR-contg. compns. for base **rubbers** of **tires** for control stability and high-speed durability)
IT **Tires**
(high SBR-contg. compns. for base **rubbers** of

**tires** for control stability and high-speed durability)
IT Carbon black, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(high SBR-contg. compns. for base **rubbers** of **tires** for control stability and high-speed durability)
IT Natural **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(high SBR-contg. compns. for base **rubbers** of **tires** for control stability and high-speed durability)
IT **Coupling** agents
(**silanes**; high SBR-contg. compns. for base **rubbers** of **tires** for control stability and high-speed durability)
IT 7631-86-9, Silica, uses **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(high SBR-contg. compns. for base **rubbers** of **tires** for control stability and high-speed durability)
IT 9003-55-8
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, Tufdene 2530; high SBR-contg. compns. for base **rubbers** of **tires** for control stability and high-speed durability)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(high SBR-contg. compns. for base **rubbers** of **tires** for control stability and high-speed durability)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 27 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:518340 Document No. 127:122858 Vulcanizable **rubber** compounds for **tires**. Braubach, Wilfried; Jeske, Winfried; Marwede, Guenter (Bayer A.-G., Germany). Ger. Offen. DE 19547630 A1 19970626, 8 pp. (German). CODEN: GWXXBX. APPLICATION: DE 95-19547630 19951220.
AB **Rubber** compds. useful esp. for **tire** treads with increased vulcanization rate and good balance of phys. properties and manufg. costs, contain styrene-butadiene copolymers (15-45% styrene) 20-95, vinyl-polybutadiene (30-80% vinyl) 10-70, finely dispersed silica or silica-carbon black mixts. 50-100 phr, and, optionally, **silane coupling** agents and other customary ingredients. A typical compd. contained Buna VI 70-1 (vinyl-polybutadiene **rubber** with .apprx.70% 1,2-vinyl) 57.8, Krynol 1721 (emulsion SBR with 40% styrene, extended with 27.3% arom. mineral oil) 38.5, Buna CB-24 30, Renopal 450 (arom. mineral oil) 11.3, Vulkasil S, 70, Black N 121 (carbon black) 10, **Silane** Si 69 (**coupling** agent) 6, ZnO 2.5, stearic acid 1, Antilux 654 1.5, Vulkanox HS/LG 1, Vulkanox 4020/LG 1, Vulkacit CZ/EGC 1.8, Vulkacit D/C 2, and S 1.5 parts.
IC ICM C08L009-06
ICS C08L009-00; C08C019-28; C08K003-04; C08K003-36; C08K009-06; B60C001-00

ICI C08K009-06, C08K005-54
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
ST **rubber** compd **tire** tread vulcanization rate; SBR **tire** tread **rubber** compd vulcanization; vinyl polybutadiene **rubber** compd vulcanization rate
IT Butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Buna CB 24; vulcanizable **rubber** compds. for **tires**)
IT 1,2-Butadiene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Buna VI 70-1; vulcanizable **rubber** compds. for **tires**)
IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(Columbia N 121; vulcanizable **rubber** compds. for **tires**)
IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Krynol 1721; vulcanizable **rubber** compds. for **tires**)
IT **Tires**
(treads; vulcanizable **rubber** compds. for **tires**)
IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(1,2-Butadiene **rubber**, Buna VI 70-1; vulcanizable **rubber** compds. for **tires**)
IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, Buna CB 24; vulcanizable **rubber** compds. for **tires**)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; vulcanizable **rubber** compds. for **tires** contg.)
IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, Krynol 1721; vulcanizable **rubber** compds. for **tires**)
IT 7631-86-9, Vulkasil S, uses
RL: MOA (Modifier or additive use); USES (Uses)
(vulcanizable **rubber** compds. for **tires** contg.)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; vulcanizable **rubber** compds. for **tires** contg.)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 28 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:500030 Document No. 127:110185 Low-heat-generation diene **rubber** compositions with good tensile strength and abrasion resistance. Nakamura, Masao; Takagishi, Yukio (Nippon Zeon Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09151276 A2 19970610 Heisei, 17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 95-332836 19951128.

AB The title compns. comprise (hetero atom polar group-modified) diene **rubbers** [e.g., SBR modified with hydroxyethyl methacrylate, N,N-dimethylaminopropylacrylamide, N-methyl-.epsilon.-caprolactam, ethylene oxide, N-vinylpyrrolidone, or 4,4'-bis(diethylamino)benzophenone] 100, reinforcing agents (e.g., carbon black) 10-200, and fatty acid salts (e.g., Ca stearate, Li stearate, Ca laurate) 0.1-15 parts.

IC ICM C08L009-00
ICS B60C001-00; C08K003-00; C08K005-098

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST polar group modified SBR **tire**; hydroxyethyl methacrylate modified SBR **tire**; dimethylaminopropylacrylamide modified SBR **tire**; methylcaprolactam modified SBR **tire**; ethylene oxide modified SBR **tire**; vinylpyrrolidone modified SBR **tire**; carbon black modified SBR **tire** ; calcium stearate modified SBR **tire**

IT **Silanes**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(**coupling** agents; low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT Styrene-butadiene **rubber**, properties
cis-1,4-Isoprene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(hetero atom polar group-modified; low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT Abrasion-resistant materials
Coupling agents
**Tires**
(low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT Carbon black, uses
Naphthenic oils
RL: MOA (Modifier or additive use); USES (Uses)
(low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; TEM (Technical or engineered material use); USES (Uses)
(coupling agents; low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT 1314-13-2, Zinc oxide, uses 1592-23-0, Calcium stearate
4485-12-5, Lithium stearate 4696-56-4, Calcium laurate
7631-86-9, Nipsil VN 3, uses
RL: MOA (Modifier or additive use); USES (Uses)

(low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

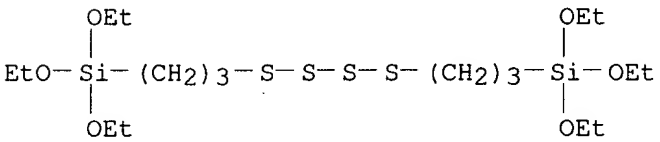
IT 75-21-8D, Ethylene oxide, reaction product with diene **rubber** 88-12-0D, reaction product with diene **rubber** 90-93-7D, 4,4'-Bis(diethylamino)benzophenone, reaction product with diene **rubber** 868-77-9D, reaction product with diene **rubber** 2556-73-2D, N-Methyl-.epsilon.-caprolactam, reaction product with diene **rubber** 3845-76-9D, reaction product with diene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, hetero atom polar group-modified; low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT 9003-31-0
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Isoprene **rubber**, hetero atom polar group-modified; low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; TEM (Technical or engineered material use); USES (Uses)
(coupling agents; low-heat-generation diene **rubber** compns. with good tensile strength and abrasion resistance)

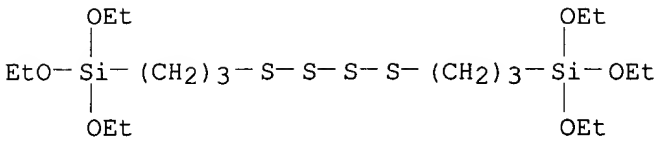
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 29 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:475922 Document No. 127:82696 **Rubber** compositions for **tire** treads. Teratani, Hiroyuki (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09136999 A2 19970527 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 95-296801 19951115.

AB **Rubber** compns., forming **tire** treads having good ice and wet (on asphalt roads) skid resistance without impairing abrasion resistance, contain 100 parts **rubbers**, **silane couplers**, 3-30 parts particles having JIS K 6301 C hardness of .gtoreq.75, av. diam. of 5-250 .mu.m, and surfaces with Al- and/or Si-bonded OH groups, and contg. .gtoreq.20% Al(OH)3 and/or SiO2, and 10-100 parts reinforcers consisting of carbon black having N adsorption sp. surface area 100-180 m2/g and DBP adsorption 120-180 mL/100 g and .gtoreq.20% silica having BET sp. surface area of 100-300 m2/g. A compn. contg. natural **rubber** 35, butadiene **rubber** 65, carbon black 25, silica 30, bis(3-triethoxysilylpropyl)tetrasulfide (I; coupler for silica and particles) 5, S 1.2, blowing agents 5.0, 50-.mu.m Al(OH)3 10, and other additives 6.4 parts was made into a foam tread showing ice and wet skid resistance of 16-21% and 2% higher than those of a tread prepd. from similarly compns. without the silica, I, and

Al(OH)3.
IC ICM C08L021-00
ICS B60C001-00; C08K003-20; C08K003-36; C08K005-54
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
ST **silane coupler** tread ice skid resistance; wet asphalt skid resistance tread compn; aluminum hydroxide **rubber** compn **tire** tread; silica **tire** tread wet skid resistance
IT Coupling agents
(specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT Carbon black, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT Butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT Natural **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT **Tires**
(treads; specific particle- and **silane coupler** -contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT 9003-17-2
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
119388-54-4
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**coupler**; specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT 7631-86-9, Silica, properties 21645-51-2, Aluminum hydroxide, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(particles; specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**coupler**; specific particle- and **silane coupler**-contg. **rubber** compns. for **tire** treads with ice and wet skid resistance)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 30 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:429428 Document No. 127:52094 **Rubber** compositions for **tire** treads. Teratani, Hiroyuki (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09124850 A2 19970513 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 95-280701 19951027.

AB **Rubber** compns., useful for **tire** treads having good abrasion and ice-skid resistance, contain 10-100 phr carbon black having N adsorption sp. surface area (N2SA) 100-180 m2/g and DBP adsorption (DBPA) 120-180 mL/100 g, 3-30 phr particles having JIS K 6301-C hardness .gtoreq.75.degree., av. diam. 5-250 .mu.m, and Al- and/or Si-bonded OH groups on particle surfaces, and 3-50% (based on the particles) specific **silane couplers**. A compn. contg. natural **rubber** 70, butadiene **rubber** 30, carbon black (N2SA 143 m2/g, DBPA 127 mL/100 g) 60, S 1.1, foaming agents 5.2, 50-.mu.m Al(OH)3 15, and [(OET)3SiC3H6]2S4 3.0 parts gave a cellular tread showing good abrasion and skid resistance at -2.degree. or -8.degree..

IC ICM C08L021-00
ICS B60C001-00; C08K003-20; C08K005-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST ice skid resistance foam tread alumina; abrasion resistance foam tread carbon black; **silane coupler** cellular **tire** tread

IT **Silanes**
RL: MOA (Modifier or additive use); USES (Uses)
(**coupler**; specific **silane coupler** /alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT Abrasion-resistant materials
**Coupling** agents
(specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT Carbon black, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT Butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT Natural **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT **Tires**
(treads; specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT 9011-14-7, PMMA

RL: TEM (Technical or engineered material use); USES (Uses)
(alumina or silica blends; specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

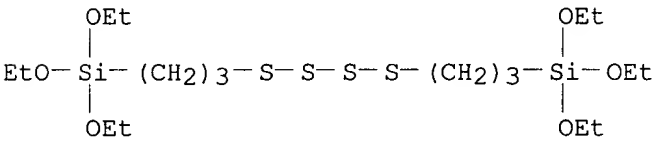
IT 9003-17-2
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide 119388-54-4
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**coupler**; specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT 1344-28-1, Alumina, properties 7631-86-9, Silica, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**coupler**; specific **silane coupler**/alumina (or silica)/carbon black-contg. foam treads with abrasion and ice-skid resistance)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 31 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:421093 Document No. 127:52091 **Rubber** compositions for **tire** treads having good abrasion and wet-skid resistance and high break energy. Kimura, Shigeo (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09111039 A2 19970428 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 95-293319 19951017.

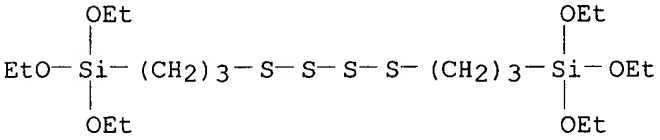
AB Title compns. contain 100 parts **rubbers** contg. .gtoreq.40% natural and/or isoprene **rubber**, .gtoreq.40 parts SiO2 (BET adsorption 150-240 m2/g), 2.0-12.0 parts nonionic surfactants, and 5-25% (based on SiO2 content) **silane couplers** and are vulcanized to form products having 60.degree. loss tangent (tan.delta.) .ltoreq.0.10, 60.degree. dynamic storage modulus (DM) .gtoreq.5.0 .times. 107 dyne/cm2, and 100.degree. break energy (TF) .gtoreq.100. A compn. contg. natural **rubber** 50, SBR 50, Nipsil AQ 65, Si 69 (a **silane coupler**) 6.5, and antistatic agent KBL 457 6 part was vulcanized to form a **tire** tread having Lambourn wear resistance 60% and wet-skid resistance 20% better than a **tire** tread prepd. from similar compn. contg. carbon black instead of the Nipsil AQ, Si 69, and KBL 457.

IC ICM C08L007-00
ICS B60C001-00; C08K003-36; C08K005-54; C08L009-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

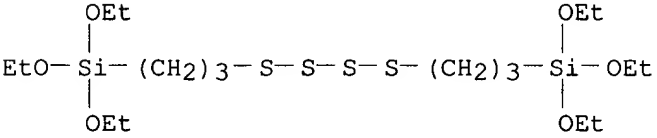
ST abrasion resistance **tire** natural **rubber** silica; wet skid resistance **tire** natural **rubber**

IT Nonionic surfactants
(antistatic agent; silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
IT **Coupling** agents
**Tires**
(silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
IT Isoprene **rubber**, uses
Natural **rubber**, uses
Styrene-butadiene **rubber**, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(Tokusil URB, Nipsil KQ; silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
IT 9003-31-0
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(isoprene **rubber**, silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
IT **40372-72-3**, Si 69 190856-87-2, Rikemal A 23 190857-01-3, KBL 457
RL: **MOA (Modifier or additive use)**; USES (Uses)
(silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
IT 9003-55-8
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(silica/**silane coupler**/nonionic surfactant-contg. **rubber** compns. for **tire** treads)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 32 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:412191 Document No. 127:96411 Optimization of tread compound for passenger car **tire** with high dispersible silica in SSBR.
Cochet, Ph.; Barriquand, L.; Dejean, B.; Bomal, Y. (Rhone-Poulenc Chimie, Fr.). TyreTech Asia 96, Book Pap. Two-Day Conf., paper 13, pp. 1-11. Rapra Technology: Shrewsbury, UK. (English) 1996. CODEN:

64PMAB.
AB Amorphous pptd. silicas are more and more used by most **tire** manufacturers, mainly to decrease **tire** rolling resistance. A specific silica has been developed, which is characterized by a much higher dispersibility than the conventional grades. **Tire** producers have been successful in obtaining both low rolling resistance and high wet and wear performance using high dispersibility pptd. silica and **silane coupling** agent together with soln. polymers in **tire** treads. Variations in tan.delta. illustrate the contribution of soln. polymers, high dispersibility pptd. silica, and **silane coupling** agent to this new tread compd. technol. A high dispersibility pptd. silica, used with a coupling agent, is the best suited reinforcing filler for soln. vinyl-SBR.
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
ST **tire** tread silica SBR
IT Butadiene **rubber**, uses
Styrene-butadiene **rubber**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(in **tire** tread with high silica content)
IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(ratio to silica; in **tire** tread with high silica content)
IT **Coupling** agents
(**silane**; in **tire** tread with high silica content)
IT **Tires**
(treads; optimization of compds. with high silica content)
IT 9003-17-2
RL: TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, in **tire** tread with high silica content)
IT **40372-72-3**, X50S (Coupling agent)
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; in **tire** tread with high silica content)
IT 9003-55-8
RL: TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, in **tire** tread with high silica content)
IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**tire** tread with high silica content)
IT **40372-72-3**, X50S (Coupling agent)
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupler; in **tire** tread with high silica content)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 33 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:299327 Document No. 126:278762 Continuous mixing of silica loaded **elastomeric** compounds in a twin-screw extruder. Eswaran, Vetkav Rajagopalan; Kiehl, Christopher; Magnus, Fredrick Lewis; Handa, Pawan Kumar (Goodyear Tire and Rubber Co., USA). PCT Int.

Appl. WO 9709162 A1 19970313, 46 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, NL, PT, SE. (English). CODEN: PIXXD2.
APPLICATION: WO 96-US12901 19960808. PRIORITY: US 95-523458 19950905.

AB The **elastomeric** compds. are mixed by providing a twin-screw extruder comprising a housing contg. a pair of screws, feed openings, and a discharge opening, feeding a compn. comprising an **elastomer**, 30-110 phr silica, and .gtoreq.1 silica coupler to a feed opening, mixing the compn. at a temp. to cause reaction between the coupler and silica, adding curatives and accelerators to the compn., and extruding the compn. Butadiene-isoprene-styrene copolymer **rubber** 70.0, cis-1,4-polybutadiene 30.0, silica gel (Hisil 233) 10.0, silica gel (Hisil 210) 67.0, and 50:50 mixt. of bis[3-(triethoxysilyl)propyl] tetrasulfide and carbon black 12.8 parts and other additives were fed to a twin-screw extruder and mixed at barrel zone temp. 61, 175, 126, 103, 107, and 195.degree. to give a **tire** tread compd. exhibiting rolling resistance 36.3%, DIN abrasion resistance 140, and ratio of 300% modulus to 100% modulus 3.18.

IC ICM B29C047-10
ICS B29C047-40; C08K003-36; C08K005-54; C08L021-00
CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)
Section cross-reference(s): 37
ST **elastomer** silica loaded continuous mixing; **rubber** silica loaded continuous mixing; butadiene isoprene styrene **rubber** silica mixing; **tire** tread compd silica loaded mixing; abrasion resistance silica loaded **elastomer** comd

IT Silica gel, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(Hisil 233, Hisil 210; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT Butadiene **rubber**, properties
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(blends with butadiene-isoprene-styrene **rubber**; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT Synthetic **rubber**, properties
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(butadiene-isoprene-styrene; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT Abrasion-resistant materials
Extrusion apparatus for polymeric materials
Extrusion of polymeric materials
(continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT **Rubber**
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT Polymer blends
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC

(Process); USES (Uses)
(**rubber**-diene **rubber** blends; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT **Coupling** agents
(**silanes**; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT **Tires**
(treads; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder for)

IT 9003-17-2
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(butadiene **rubber**, blends with butadiene-isoprene-styrene **rubber**; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

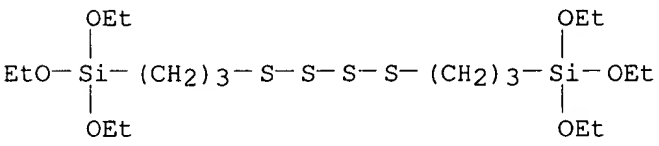
IT 7631-86-9, Silica, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT **40372-72-3**
RL: **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agent; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT 26602-62-0, Butadiene-isoprene-styrene copolymer
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**rubber**, blends with butadiene **rubber**; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

IT **40372-72-3**
RL: **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agent; continuous mixing of silica loaded **elastomeric** compds. in twin-screw extruder)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 34 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:293771 Document No. 126:265082 **Rubber** composition and **tires** therefrom. Beckmann, Otto; Teves, Reinhard; Bertrand, Joachim (Semperit Reifen Aktiengesellschaft, Austria). Eur. Pat. Appl. EP 761734 A1 19970312, 8 pp. DESIGNATED STATES: R: AT, DE, ES, FR, GB, IT, NL, PT, SE. (German). CODEN: EPXXDW. APPLICATION: EP 96-890140 19960904. PRIORITY: AT 95-1482 19950907.

AB Tread **rubber** compns. are based on >1 diene **rubber** 100, pptd. silica 5-100, carbon black 0-80, optional **silane coupler** 0.2-10, and nonarom. viscosity-reducing material contg. >2 OH groups 0.5-20 parts. The viscosity-reducing material may be in the form of an O deriv., such as an ester or acetal. The reduced viscosity facilitates processing. Examples were given using

a mixt. of natural **rubber**, SBR, and cis-butadiene **rubber** which incorporated glycerol, glycerol monostearate, sorbitan monostearate, sorbitan monooleate, or trimethylolpropane.

IC ICM C08K005-04
ICS C08L021-00; B60C001-00

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST **rubber** viscosity lowering processing aid; **tire** tread **rubber** processing diol

IT Fatty acid esters
RL: MOA (Modifier or additive use); USES (Uses)
(coco; viscosity-lowering processing aids for **tire** tread **rubber**)

IT Coco fatty acids
Soya fatty acids
RL: MOA (Modifier or additive use); USES (Uses)
(esters; viscosity-lowering processing aids for **tire** tread **rubber**)

IT Coupling agents
(for silica-contg. **tire** tread **rubber**)

IT Fatty acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(rape-oil, esters; viscosity-lowering processing aids for **tire** tread **rubber**)

IT Fatty acid esters
RL: MOA (Modifier or additive use); USES (Uses)
(soya fatty acid esters; viscosity-lowering processing aids for **tire** tread **rubber**)

IT **Tires**
(treads; viscosity-lowering processing aids for **rubber** compns. for)

IT cis-1,4-Butadiene **rubber**
Natural **rubber**, uses
Styrene-butadiene **rubber**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(viscosity-lowering processing aids for **tire** tread compns. contg.)

IT Acetals
Fatty acid esters
Esters, uses
Glycols, uses
RL: MOA (Modifier or additive use); USES (Uses)
(viscosity-lowering processing aids for **tire** tread **rubber**)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(viscosity-lowering processing aids for **tire** tread **rubber** contg.)

IT **40372-72-3**, Bis[3-(triethoxysilyl)propyl] tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(couplers for silica-contg. **tire** tread **rubber**)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(pptd.; viscosity-lowering processing aids for **tire** tread **rubber** contg.)

IT 9003-55-8
RL: TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, viscosity-lowering processing aids for **tire** tread compns. contg.)

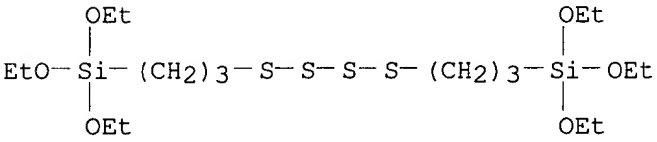
IT 50-70-4, Sorbitol, uses 56-81-5, Glycerol, uses 57-10-3D, Palmitic acid, esters 57-11-4D, Stearic acid, esters 57-50-1, Sucrose, uses 60-33-3D, Linoleic acid, esters 69-65-8, Mannitol 77-99-6, Trimethylolpropane 78-26-2 87-99-0, Xylitol 112-80-1D, Oleic acid, esters 115-77-5, Pentaerythritol, uses

115-84-4, 2-Butyl-2-ethyl-1,3-propanediol 124-07-2D, Octanoic acid, esters 126-58-9, Dipentaerythritol 141-22-0D, Ricinoleic acid, esters 143-07-7D, Lauric acid, esters 149-32-6, Erythritol 149-57-5D, 2-Ethylhexanoic acid, esters 463-40-1D, Linolenic acid, esters 608-66-2, Dulcitol 813-60-5 1338-41-6, Sorbitan monostearate 1338-43-8, Sorbitan monooleate 5343-92-0, 1,2-Pentanediol 12441-09-7, Sorbitan 31566-31-1, Glycerol monostearate 59113-36-9, Diglycerol
RL: MOA (Modifier or additive use); USES (Uses)
(viscosity-lowering processing aids for **tire** tread **rubber**)

IT 9003-17-2
RL: TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, viscosity-lowering processing aids for **tire** tread compns. contg.)

IT **40372-72-3**, Bis[3-(triethoxysilyl)propyl] tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(couplers for silica-contg. **tire** tread **rubber**)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 35 OF 70 HCAPLUS COPYRIGHT 1998 ACS

1997:283683 Document No. 126:265085 **Rubber** compositions and pneumatic **tires** therefrom which excel in low rolling resistance and wet skid resistance. Satoh, Hidenori; Araki, Shunji; Cataldo, Franco (Bridgestone Corporation, Japan). Eur. Pat. Appl. EP 761733 A2 19970312, 24 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 96-113925 19960830. PRIORITY: JP 95-224019 19950831; JP 95-224020 19950831.

AB Natural **rubber** and/or a conjugated diene-based synthetic **rubber** such as SBR is compounded with 30-120 phr carbon black having [concn. of functional groups (>C=O) which react with hydroxylamine and produce oxime]/[N2 absorption sp. surface area (N2SA)] .gtoreq.4.0 .times. 10-4 and (>C=O concn.) .gtoreq. [concn. of functional groups (-OH) which react with acetic anhydride]2 - 0.1 .times. (-OH concn.) + 0.03, or with 30-120 phr carbon black having (>C=O concn.)/N2SA .gtoreq.4.0 .times. 10-4 and 0.05-5.0 phr .gtoreq.1 of a **silane coupling** agent, a hydrazide compd., and a thiadiazole compd. Thus, a compn. of natural **rubber** 30, SBR coupled with SnCl4 70, and oxidized channel-type carbon black (Special Black 4A, N2SA 179 m2/g, >C=O concn. 0.131 meq/g, -OH concn. 0.327 meq/g) was used in **tire** treads giving rolling resistance index 112 and wet-skid index 107.

IC ICM C08K003-04
ICS C08L021-00; B60C001-00

CC 39-15 (Synthetic **Elastomers** and Natural **Rubber**)

ST carbon black property **tire** tread; channel black property **tire** tread; natural **rubber tire** hysteresis skid resistance; SBR modified **tire** hysteresis skid resistance; tin modified SBR **tire** tread

IT Styrene-butadiene **rubber**, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)

(modified; **rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT **Tires**
(**rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT Carbon black, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(**rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT Butadiene **rubber**, uses
Natural **rubber**, uses
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(**rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT 9003-17-2
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(butadiene **rubber**, **rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; in **rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

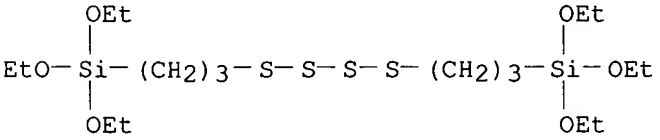
IT 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2760-98-7, Isophthaloyl dihydrazide 5341-58-2
RL: MOA (Modifier or additive use); USES (Uses)
(in **rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT 7646-78-8DP, Tin tetrachloride, reaction products with SBR **rubber** 54537-15-4DP, Diethylaminobenzophenone, reaction products with SBR **rubber**
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)
(**rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT 9003-55-8P
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)
(styrene-butadiene **rubber**, modified; **rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; in **rubber** compns. for pneumatic **tires** which excel in low rolling resistance and wet skid resistance)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 36 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:265564 Document No. 126:252317 Stable silane compositions on silica carrier, their formation and formulation as reinforcement of **rubbers**. Guillet, Antoine; Gauthier, Remy (Osi Specialties, Inc., USA). PCT Int. Appl. WO 9707165 A1 19970227, 53 pp. DESIGNATED STATES: W: BR, CA, JP, KR, SG; RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 96-US13250 19960816. PRIORITY: US 95-2778 19950816.

AB Over 80% and even over 90% of the silane can be extd. or desorbed from the blend even 4 mo after formation of the blend, and **rubber** formulation properties, i.e. 300% modulus of 4 mo old **rubber** compd. is within 10% of the initial 300% modulus, indicate high availability of the **silane** for **coupling** and reinforcement. SiO2 has a low differential of IR absorption at 3502 cm-1 at 105.degree. and 500.degree. and is of low surface reactivity. The SiO2 can be prepd. by the steps of forming aq. soln. of alkali metal silicate, heating to 70-98.degree., adding strong acid until gelation, aging the gel, adding strong acid, adding electrolyte, adding strong acid and alkali metal silicate, adjusting to pH <4.5 with strong acid, filtering and washing, optionally redispersing SiO2 and treating with Al oxide. The silane masterbatches were tested in **rubber** and **tire** formulations.

IC ICM C08L083-16
ICS C08K009-06

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)

ST alkoxysilane silica masterbatch **rubber** formulation; silane silica masterbatch **rubber** formulation; coupling reinforcement **rubber** formulation

IT **Tires**
(stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

IT Alkoxy silanes
RL: MOA (Modifier or additive use); USES (Uses)
(stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

IT Butadiene **rubber**, properties
Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(Silquest A 1289; stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(butadiene **rubber**, stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

IT 78-08-0, Vinyltriethoxysilane 1067-53-4, Vinyl tris-2-(methoxyethoxy)silane 2768-02-7 4420-74-0 13818-38-7, 3-Mercaptopropylmethyldiethoxysilane 14814-09-6, 3-Mercaptopropyltriethoxysilane 16753-62-1, Vinylmethyldimethoxysilane 34708-08-2 **56706-10-6**, Bis(3-triethoxysilylpropyl)disulfide 60764-86-5 69952-88-1 70253-72-4 85912-75-0 141137-15-7 188561-24-2 188561-25-3 188561-27-5
RL: **MOA (Modifier or additive use)**; USES (Uses)
(stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

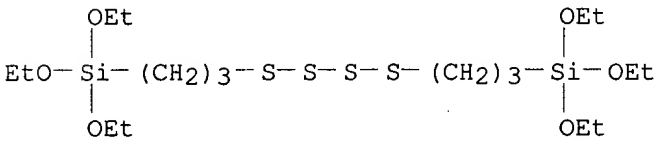
IT 7631-86-9, Silica, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(stable silane compns. on silica carrier as reinforcement of

**rubber** formulations)

IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(styrene-butadiene **rubber**, stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

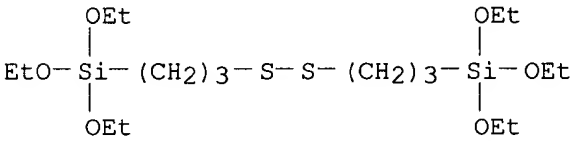
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(Silquest A 1289; stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



IT **56706-10-6**, Bis(3-triethoxysilylpropyl)disulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(stable silane compns. on silica carrier as reinforcement of **rubber** formulations)

RN 56706-10-6 HCAPLUS
CN 3,14-Dioxa-8,9-dithia-4,13-disilahexadecane, 4,4,13,13-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 37 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:174570 Document No. 126:172902 **Rubber** compositions containing silica for **tire** treads. Matsuo, Toshiaki (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08337687 A2 19961224 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 95-146453 19950613.

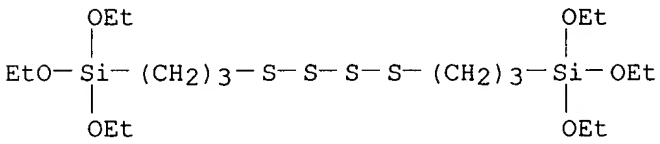
AB The compns. comprise 100 parts **rubbers**, 30-90 parts SiO2 [100 .ltoreq. NA < 200; NA = N adsorption sp. surface area (m2/g); DBP absorption ability (DA) .gtoreq.240 g/100-g], and bis(triethoxysilylpropyl) tetrasulfide (I) as a **silane coupling** agent, in which the amts. of I satisfy X = AB/11.17C [X = **silane coupling** agent content (%; based on 100 parts SiO2); A = silanol group no. per 1-mm2 SiO2 (no./mm2); B = NA; 2.6 .ltoreq. C .ltoreq. 5.0; C = reactivity const. of I to silanol groups]. Thus, **tire** treads prepd. from a compn. contg. natural **rubber** 40, NS 116 (SBR) 60, silica (FK 160; A = 2.6/mm2; NA = 160 m2/g; DA = 250 g/100-g) 50, I 6.9 (X = 13.8%; C = 2.7), and other additives 17.5 parts showed good abrasion resistance, and gripping properties.

IC ICM C08L021-00
ICS B60C001-00; C08K003-36; C08K005-36; C08K005-54

CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)

ST abrasion resistance **rubber tire** tread; natural **rubber** silica blend **tire** tread; butadiene styrene **rubber** silica **tire** tread; SBR natural **rubber tire** tread; ethoxypropyl sulfide

**silane coupling** agent
IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(NS 116; **rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
IT Abrasion-resistant materials
Coupling agents
(**rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
IT Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
IT **Tires**
(treads; **rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(FK 160; **rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
IT **40372-72-3**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**silane coupling** agent; **rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, NS 116; **rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
IT **40372-72-3**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**silane coupling** agent; **rubber** compns. with good abrasion resistance and gripping properties for **tire** treads)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 38 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:155025 Document No. 126:158623 Surface-modified oxide or silicate fillers for **rubbers**. Scholl, Thomas (Bayer A.-G., Germany). Eur. Pat. Appl. EP 753549 A2 19970115, 11 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT. (German). CODEN: EPXXDW. APPLICATION: EP 96-109685 19960617. PRIORITY: DE 95-19523470 19950628; DE 95-19549034 19951228.
AB The title fillers, giving **rubber** moldings (esp. **tires**) with good reinforcement and abrasion resistance, are prepd. by reaction of oxides or silicates with the silanes R1R2R3SiZ1(SxZ3)m(SxZ2SiR1R2R3)n [R1-3 = hydrocarbyl, hydrocarbyloxy; Z1, Z2 = (cyclo)alk(en)ylene; Z3 = substituted (cyclo)alk(en)ylene optionally contg. O, S, or N atoms; m = 1-20; n

= 1-6; x = 1-8]. Refluxing 117 h Na2S with 144 g S, 183.9 g (EtO)3Si(CH2)3Cl, and 197.5 g (ClCH2CH2O)2CH2 in PhMe gave 453 g (EtO)3Si(CH2)3(S4CH2CH2OCH2CH2)3S4(CH2)3Si(OEt)3 (I). Evapg. a mixt. of 500 g pptd. SiO2 (sp. surface 180 m2/g) and 40.6 g I in PhMe gave a filler. A compounded 3:1 SBR-butadiene **rubber** blend contg. 86.5 phr this filler gave vulcanizates with 300% modulus 14.6 MPa, tensile strength 17.6 MPa, elongation 356%, Shore A hardness 77, elasticity (70.degree.) 45%, and tan .delta. (60.degree.) 0.119; vs. 12.2, 18, 410, 71, 44, and 0.131, resp., with [(EtO)3Si(CH2)3]2S4 in place of I.

IC ICM C09C003-12
ICS C08K009-06

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)
Section cross-reference(s): 23

ST coupler filler **rubber**; polysulfide silyl deriv coupler; **silane** polysulfide deriv **coupler**; silica filler **rubber** coupler; **tire rubber** filler coupler; butadiene **rubber** blend filler; SBR blend filler coupler

IT Butadiene **rubber**, properties
**Rubber**, properties
Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(blends; surface-modified oxide or silicate fillers for **rubbers**)

IT **Coupling** agents
(**silane** polysulfide **couplers** for fillers for **rubber**)

IT Polysulfides
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(silyl group-terminated, couplers; surface-modified oxide or silicate fillers for **rubbers**)

IT Oxides (inorganic), uses
Silicates, uses
RL: MOA (Modifier or additive use); USES (Uses)
(surface-modified oxide or silicate fillers for **rubbers**)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(butadiene **rubber**, blends; surface-modified oxide or silicate fillers for **rubbers**)

IT 186041-94-1P 186041-95-2P 186041-96-3P 186892-70-6P **186892-71-7P**
RL: IMF (Industrial manufacture); **MOA (Modifier or additive use)**; PRP (Properties); PREP (Preparation); USES (Uses)
(couplers; surface-modified oxide or silicate fillers for **rubbers**)

IT 7704-34-9, Sulfur, reactions
RL: RCT (Reactant)
(reaction with sodium sulfide, (chloropropyl)triethoxysilane, and org. dihalides)

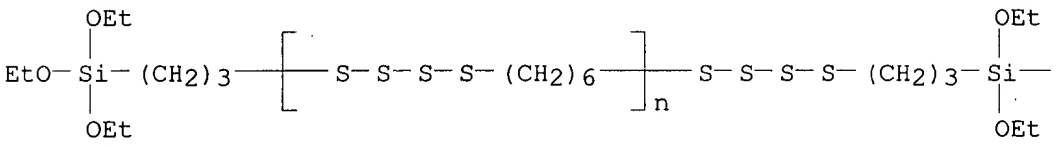
IT 111-91-1, Bis(2-chloroethyl) formal 112-26-5, 1,2-Bis(2-chloroethoxy)ethane 2163-00-0, 1,6-Dichlorohexane
RL: RCT (Reactant)
(reaction with sodium sulfide, (chloropropyl)triethoxysilane, and sulfur)

IT 5089-70-3, (3-Chloropropyl)triethoxysilane
RL: RCT (Reactant)
(reaction with sodium sulfide, sulfur, and org. dihalides)

IT 1313-82-2, Disodium sulfide, reactions
RL: RCT (Reactant)
(reaction with sulfur, (chloropropyl)triethoxysilane, and org. dihalides)

IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(styrene-butadiene **rubber**, blends; surface-modified oxide or silicate fillers for **rubbers**)
IT 7631-86-9, Silica, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(surface-modified oxide or silicate fillers for **rubbers**)
IT **186892-71-7P**
RL: IMF (Industrial manufacture); **MOA (Modifier or additive use)**; PRP (Properties); PREP (Preparation); USES (Uses)
(couplers; surface-modified oxide or silicate fillers for **rubbers**)
RN 186892-71-7 HCAPLUS
CN Poly(tetrathio-1,6-hexanediyl), .alpha.-[3-(triethoxysilyl)propyl]-.omega.-[[3-(triethoxysilyl)propyl]tetrathio]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

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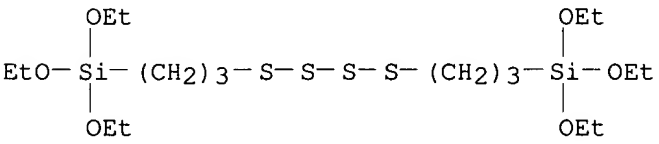
L78 ANSWER 39 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:107411 Document No. 126:118952 **Rubber** compositions for use in **tire** treads showing good road handling under a wide-range of service conditions. Ohashi, Masayuki; Nakamura, Eiji (Bridgestone Corporation, Japan). Eur. Pat. Appl. EP 748841 A1 19961218, 11 pp. DESIGNATED STATES: R: DE, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 96-304048 19960604. PRIORITY: JP 95-161523 19950606.
AB Title **rubber** compn. comprises 70-120 parts C black and SiO2, **silane coupling** agent, and 35-70 parts softening agent contg. .ltoreq.10 parts ester plasticizer in addn. to a blend of soln. and emulsion polymd. SBR (total bound styrene 30-40%, vinyl content 15-25%) and has storage modulus ratio after vulcanization .gtoreq.0.43 and hysteresis loss at 150% strain .gtoreq.0.3. A compn. contg. 70/30 emulsion SBR/soln. SBR (bound styrene 35.0; vinyl content 16.4), C black (CATB 140 m2/g) 30, SiO2 (12 nm) 60, arom. oil 60, bis(3-triethoxysiylpropyl)tetrasulfide 6.5, and other ingredients 13.4 parts gave a **tire** tread showing storage modulus ratio 0.46 and hysteresis loss 0.31.
IC ICM C08L009-06
ICS C08K013-02; B60C001-00
CC 39-13 (Synthetic **Elastomers** and Natural **Rubber**)
ST **tire** tread SBR good road handling; carbon black silica mixt SBR **tire**; **silane coupling** agent **tire**; softening agent SBR **tire**
IT Petroleum products
(arom. oils; in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)

IT Carbon black, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
IT Styrene-butadiene **rubber**
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
IT **Tires**
(**rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
IT 7631-86-9, Silica, properties **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: DEV (Device component use); **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
IT 78-42-2, Trioctyl phosphate 103-23-1, Dioctyl adipate 117-81-7, Dioctyl phthalate
RL: DEV (Device component use); USES (Uses)
(in softening agent; in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
IT 32953-65-4, Octyl oleate
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(in softening agent; in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
IT 9003-55-8
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(styrene-butadiene **rubber**, in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: DEV (Device component use); **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(in **rubber** compns. for use in **tire** treads showing good wet skid resistance and resistance to thermal sag)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 40 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:77051 Document No. 126:90571 **Elastomeric** compounds containing silicon-treated carbon black and articles made from them. Mahmud, Khaled; Wang, Meng-Jiao; Francis, Robert A.; Belmont, James A. (Cabot Corporation, USA; Mahmud, Khaled; Wang, Meng-Jiao; Francis, Robert A.; Belmont, James A.). PCT Int. Appl. WO 9637547 A2 19961128, 65 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,

NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 96-US7310 19960521. PRIORITY: US 95-446141 19950522; US 95-446142 19950522; US 95-528895 19950915.

AB **Elastomeric** compds. with improved hysteresis properties comprise an **elastomer** and a silicon-treated carbon black, and optionally including a coupling agent and exhibit poorer abrasion resistance in the absence of a coupling agent, lower hysteresis at high temp., and comparable or increased hysteresis at low temp., compared to an **elastomer** contg. an untreated carbon black. The **rubber** compds. are used to produce articles such as a weatherstripping, a coolant hose, a hydraulic hose, a fuel hose, an engine mount, a bush, a conveyer belt, a power transmission belt, a seal, and a gasket. A compn. contg. 100 parts of styrene-butadiene **rubber** Duradene 715, 3 parts of **silane coupling** agent Si-69, and 50 parts of silicon-treated carbon black obtained by using octamethylcyclotetrasiloxane in the prepn. of carbon black showed abrasion at 14% slip 110.5, loss tangent 0.435 at 0.degree. and 0.152 at 70.degree..

IC ICM C08L021-00
ICS C08K009-06; C08K003-04; C09C001-44

CC 39-9 (Synthetic **Elastomers** and Natural **Rubber**)

ST **rubber** carbon black compd; silicon treatment carbon black **rubber** compn; hysteresis improvement **rubber**

IT Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Cariflex S 1215, Duradene 715, TO 589; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Silica gel, uses
RL: MOA (Modifier or additive use); USES (Uses)
(Hi-Sil 233; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT EPDM **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Royalene 509; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Natural **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(SMR-CV 60; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT cis-1,4-Butadiene **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Taktene 1203; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Transmissions (mechanical)
(belts; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Hoses
(coolant, fuel; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT **Tires**
(cords; **elastomeric** compds. contg. silicon-treated carbon black with improved adhesion to **tire** cord)

IT Bushings
Conveyor belts
Coupling agents
Gaskets

Seals (parts)
Weatherstrips
(**elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Acrylic **rubber**
Butadiene **rubber**, properties
Butyl **rubber**, properties
Epichlorohydrin **rubber**
Ethylene-vinyl acetate **rubber**
Isoprene **rubber**, properties
Neoprene **rubber**, properties
Nitrile **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Polyolefin **rubber**
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(ethylene, chlorinated; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Hoses
(hydraulic; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Nitrile **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(hydrogenated; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Engines
(**rubber** compn. for engine mount; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT Carbon black, preparation
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)
(silicon-treated, oxidized, with org. group attachment; silicon-treated carbon black for **elastomer** compns. with improved hysteresis properties)

IT Belts
(transmission; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 9010-85-9
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butyl **rubber**, **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 7440-21-3, Silicon, uses
RL: MOA (Modifier or additive use); USES (Uses)
(carbon black treated with; silicon-treated carbon black for **elastomer** compns. with improved hysteresis properties)

IT 4420-74-0 34708-08-2, 3-Thiocyanatopropyltriethoxysilane **40372-72-3**, Si 69 114136-87-7, N,N'-Bis(2-methyl-2-nitropropyl)-1,6-diaminohexane
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 24937-78-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical

or engineered material use); USES (Uses)
(ethylene-vinyl acetate **rubber, elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 9003-31-0
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(isoprene **rubber, elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 9010-98-4
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(neoprene **rubber, elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 9003-18-3
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nitrile **rubber, elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 9003-18-3
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nitrile **rubber**, hydrogenated; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 7697-37-2, Nitric acid, reactions
RL: RCT (Reactant)
(prepn. of oxidized silicon-treated carbon black for **elastomer** compns. with improved hysteresis properties)

IT 78-10-4 556-67-2
RL: RCT (Reactant)
(prepn. of silicon-treated carbon black for **elastomer** compns. with improved hysteresis properties)

IT 40965-58-0, p-Aminodiphenyl disulfide
RL: RCT (Reactant)
(prepn. of silicon-treated carbon black with org. group attachment for **elastomer** compns. with improved hysteresis properties)

IT 9002-88-4D, Polyethylene, chlorinated 9003-18-3D, Acrylonitrile-butadiene copolymer, hydrogenated 24937-78-8 24969-06-0, Polyepichlorohydrin 61710-61-0, Polyepichlorohydrin, sru
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**rubber; elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

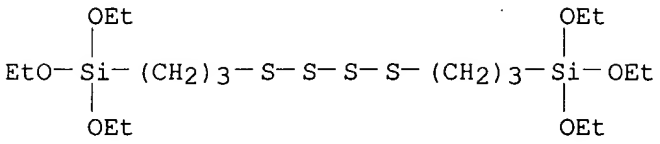
IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, Cariflex S 1215, Duradene 715, TO 589; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cis-1,4-Butadiene **rubber**, Taktene 1203; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **elastomeric** compds. contg. silicon-treated carbon black and articles made from them)

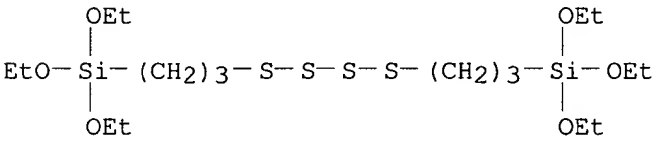
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane,

4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



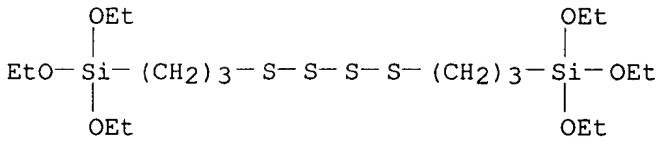
=> D L78 CBIB HITSTR 41

L78 ANSWER 41 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1997:34047 Document No. 126:61380 **Tire** tread compound of two IBR/cis-1,4-polybutadiene blend with silica/coupling agent/carbon black. Lucas, Danielle (Goodyear Tire and Rubber Co., USA). Eur. Pat. Appl. EP 744438 A1 19961127, 11 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 96-107888 19960517. PRIORITY: US 95-449864 19950524.
IT **40372-72-3**, X 50S
RL: DEV (Device component use); **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **tire** tread compd. of two IBR/cis-1,4-polybutadiene blend with silica/coupling agent/carbon black)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

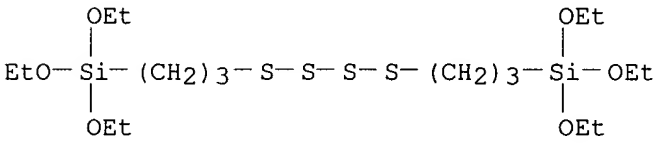


=> D L78 CBIB HITSTR 42-70

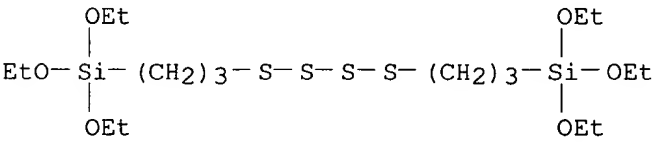
L78 ANSWER 42 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:701522 Document No. 125:331314 **Tire** with tread of cap-base construction for less heat buildup. Gabor, Jennifer Leigh; Rodgers, Michael Brendan (Goodyear Tire and Rubber Co., USA). Eur. Pat. Appl. EP 738614 A1 19961023, 15 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 96-105866 19960415. PRIORITY: US 95-427298 19950421.
IT **40372-72-3**, X 50S
RL: DEV (Device component use); **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **tire** with tread of cap-base construction for less heat buildup)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 43 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:701521 Document No. 125:331313 **Tire** with cap-base construction tread for less heat buildup. Kihn, Jean-Claude Joseph Marie (Goodyear Tire and Rubber Co., USA). Eur. Pat. Appl. EP 738613 A1 19961023, 14 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 96-105865 19960415. PRIORITY: US 95-427294 19950421.
IT **40372-72-3**, Bis-(3-triethoxysilylpropyl) tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(X 50S, coupling agent; **tire** with cap-base construction tread for less heat buildup)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 44 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:672953 Document No. 125:331319 **Tire** tread composition containing silica and **silane coupling** agent for improved wet traction. Ferrandino, Mark P.; Hong, Sung W.; McKenzie, George T. (Uniroyal Chemical Company, Inc., USA). U.S. US 5569697 A 19961029, 7 pp. (English). CODEN: USXXAM. APPLICATION: US 95-437260 19950508.
IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **tire** tread compn. contg. silica and **silane coupling** agent for improved wet traction)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

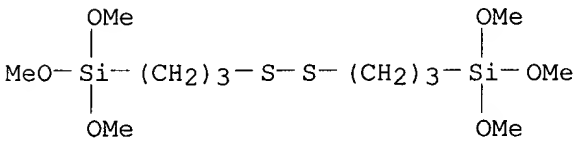


L78 ANSWER 45 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:660901 Document No. 125:278333 High-purity organosilane disulfides as coupling agents in silica-reinforced **rubber** compositions for **tire** treads. Zimmer, Rene Jean; Materne, Thierry Florent Edme; Agostini, Giorgio; Visel, Friedrich; Frank,

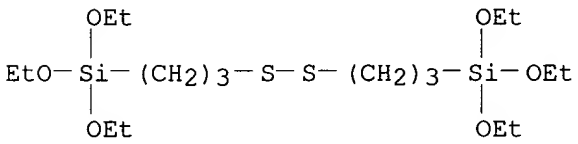
Uwe Ernst (Goodyear Tire and Rubber Co., USA). Eur. Pat. Appl. EP 732362 A1 19960918, 18 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 96-103539 19960307. PRIORITY: US 95-403989 19950314.

IT **35112-74-4**, Bis[3-(trimethoxysilyl)propyl] disulfide
**56706-10-6**, Bis[3-(triethoxysilyl)propyl] disulfide
**58392-98-6**, Bis[2-(trimethoxysilyl)ethyl] disulfide
**63501-64-4**, Bis[3-(triisopropoxysilyl)propyl] disulfide
**170573-33-8**, Bis[2-(tripropoxysilyl)ethyl] disulfide
**170573-39-4**, Bis[2-(ethoxydimethoxysilyl)ethyl] disulfide
**170573-40-7**, Bis[3-(ethoxymethoxypropoxysilyl)propyl] disulfide **170573-42-9**, Bis[4-(trimethoxysilyl)butyl] disulfide
RL: **MOA (Modifier or additive use)**; NUU (Nonbiological use, unclassified); USES (Uses)
(coupling agent for silica as reinforcing filler for **rubber tire** treads)

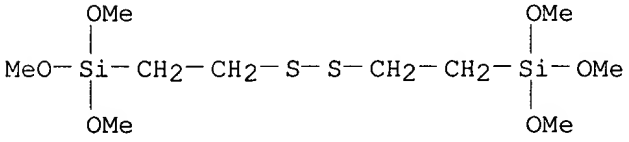
RN 35112-74-4 HCAPLUS
CN 2,13-Dioxa-7,8-dithia-3,12-disilatetradecane, 3,3,12,12-tetramethoxy- (9CI) (CA INDEX NAME)



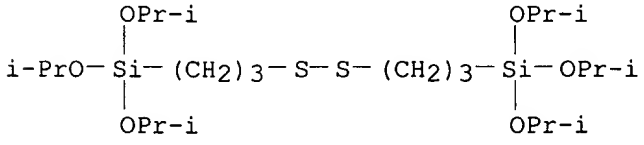
RN 56706-10-6 HCAPLUS
CN 3,14-Dioxa-8,9-dithia-4,13-disilahexadecane, 4,4,13,13-tetraethoxy- (9CI) (CA INDEX NAME)



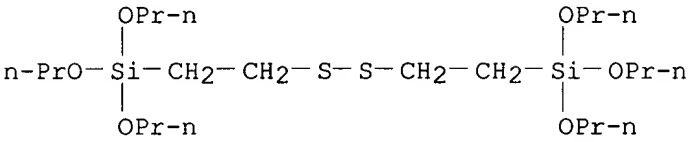
RN 58392-98-6 HCAPLUS
CN 2,11-Dioxa-6,7-dithia-3,10-disiladodecane, 3,3,10,10-tetramethoxy- (9CI) (CA INDEX NAME)



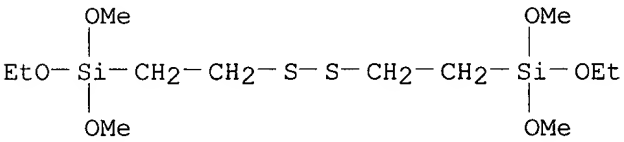
RN 63501-64-4 HCAPLUS
CN 3,14-Dioxa-8,9-dithia-4,13-disilahexadecane, 2,15-dimethyl-4,4,13,13-tetrakis(1-methylethoxy)- (9CI) (CA INDEX NAME)



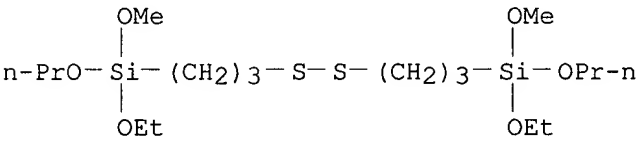
RN 170573-33-8 HCAPLUS
CN 4,13-Dioxa-8,9-dithia-5,12-disilahexadecane, 5,5,12,12-tetrapropoxy- (9CI) (CA INDEX NAME)



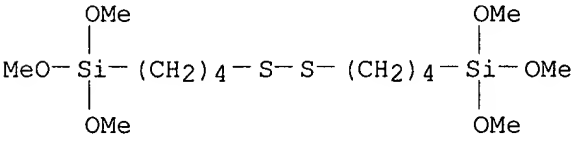
RN 170573-39-4 HCAPLUS
CN 3,12-Dioxa-7,8-dithia-4,11-disilatetradecane, 4,4,11,11-tetramethoxy- (9CI) (CA INDEX NAME)



RN 170573-40-7 HCAPLUS
CN 4,15-Dioxa-9,10-dithia-5,14-disilaoctadecane, 5,14-diethoxy-5,14-dimethoxy- (9CI) (CA INDEX NAME)

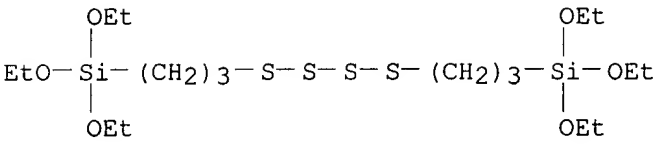


RN 170573-42-9 HCAPLUS
CN 2,15-Dioxa-8,9-dithia-3,14-disilahexadecane, 3,3,14,14-tetramethoxy- (9CI) (CA INDEX NAME)

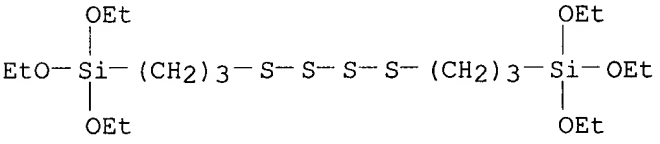


L78 ANSWER 46 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:649635 Document No. 125:278304 Low roll resistant diene **rubber** compositions. Yamamoto, Keisaku; Wakatsuki, Kizuku; Saba, Hayato (Sumitomo Chemical Company, Limited, Japan). Eur. Pat. Appl. EP 731133 A2 19960911, 12 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 96-301599 19960308. PRIORITY: JP 95-49683 19950309.
IT **40372-72-3**
RL: **MOA (Modifier or additive use)**; PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(coupling agent; kneading and formulation of silica-filled diene **rubber** compns. for low roll-resistant **tires**)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane,

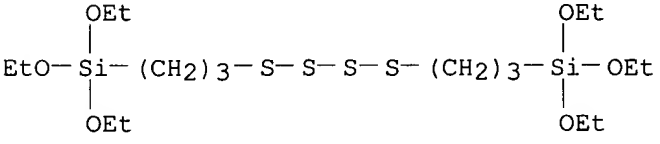
4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



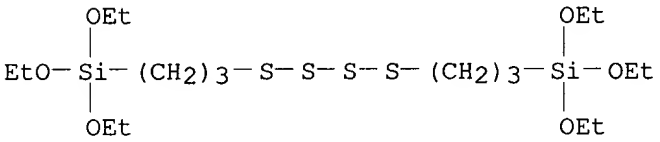
L78 ANSWER 47 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:623034 Document No. 125:250167 Manufacture of a vulcanizable **rubber** composition containing silica-based reinforcing filler and **silane coupling** agent. Nahmias, Marco; Schrafft, Robert; Joseph, Christa (Pirelli Coordinamento Pneumatici S.P.A., Italy). Eur. Pat. Appl. EP 728803 A1 19960828, 18 pp. DESIGNATED STATES: R: DE, ES, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 96-102439 19960219. PRIORITY: IT 95-MI359 19950224.
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agent; silica-filled vulcanizable **rubber** compns. for low roll-resistant **tire** treads having good reproducible properties)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



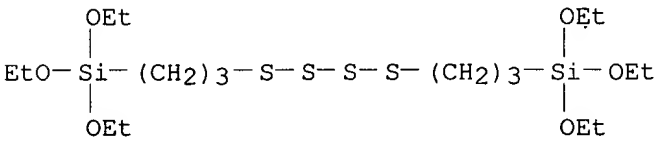
L78 ANSWER 48 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:589183 Document No. 125:250092 Chemical aspects of **rubber** reinforcement by fillers. Wolff, Siegfried (Rubber Chemical Pigments, Degussa AG, Hurth, D-50328, Germany). Rubber Chem. Technol., 69(3), 325-346 (English) 1996. CODEN: RCTEA4. ISSN: 0035-9475.
IT **40372-72-3**, Bis-(3-triethoxysilylpropyl)tetrasulfane
RL: **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(mechanisms of reinforcement of **rubbers** by carbon black and silica modified with **silane coupling** agents)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 49 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:527301 Document No. 125:144846 Foamed **rubber** composition for **tires** and pneumatic **tire** with good handling on icy roads. Teratani, Hiroyuki (Bridgestone Corporation, Japan). Eur. Pat. Appl. EP 719658 A1 19960703, 20 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 95-309458 19951227. PRIORITY: JP 94-326065 19941227; JP 95-24974 19950214; JP 95-221589 19950830; JP 95-223129 19950831.
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: DEV (Device component use); **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agent; foamable **rubber** compn. for **tires** and pneumatic **tire** with good handling on icy roads)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

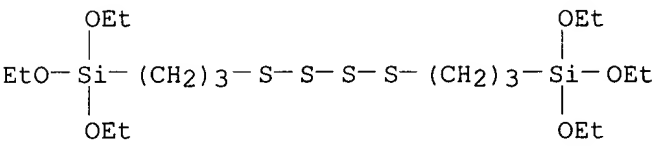


L78 ANSWER 50 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:520915 Document No. 125:144814 Composition including fiber for dimensional stability of tread **rubber** of **tires**. Kikuchi, Naohiko (Sumitomo Rubber Industries Ltd., Japan). Eur. Pat. Appl. EP 719820 A1 19960703, 8 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 95-309482 19951222. PRIORITY: JP 94-329038 19941228.
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agent; compn. including fiber for dimensional stability of tread **rubber** of **tires**)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

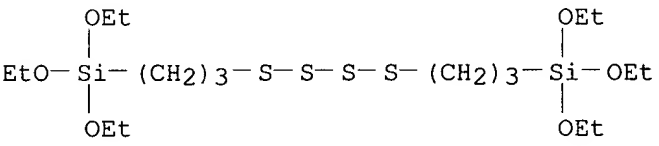


L78 ANSWER 51 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:467283 Document No. 125:144848 **Tire** with silica-reinforced **rubber** tread. Sandstrom, Paul H.; Zanzig, David J.; Sinsky, Mark S. (Goodyear Tire and Rubber Co., USA). U.S. US 5534599 A 19960709, 7 pp. (English). CODEN: USXXAM. APPLICATION: US 95-402427 19950310.
IT **40372-72-3**, X 50S
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; **tire** with silica-reinforced **rubber** tread)
RN 40372-72-3 HCAPLUS

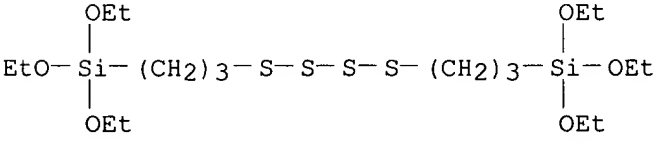
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 52 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:367419 Document No. 125:13115 Water-repellent **rubber** compositions for **tire** sidewalls. Kakumaru, Kazuo; Nakada, Yoko; Mizuno, Yoichi (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08067776 A2 19960312 Heisei, 4 (Japanese). CODEN: JKXXAF. APPLICATION: JP 94-205745 19940830.
IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agent; kaolinite-contg. **rubber** compns. for **tire** sidewalls with good soil resistance)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 53 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:236950 Document No. 124:263125 A new generation silica for **tires**. Bomal, Yves; Cochet, Philippe; Dejean, Bernard; Fourre, Patrick; Labarre, Dominique (Centre de recherches Rhone-Poulenc, Aubervilliers, 93300, Fr.). Actual. Chim. (1), 42-8 (French) 1996. CODEN: ACCHDG. ISSN: 0151-9093.
IT **40372-72-3**, X 50S (Coupling agent)
RL: **MOA (Modifier or additive use)**; USES (Uses)
(for new generation silica for **rubber** and **tires**)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

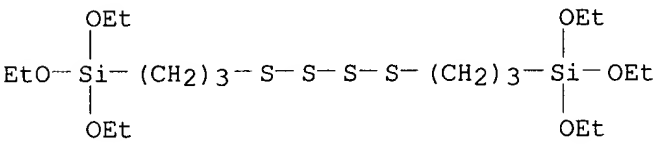


L78 ANSWER 54 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:191592 Document No. 124:292025 Use of **silane coupling** agent with carbon black to enhance the balance of reinforcement properties of **rubber** compounds. Swor, Ronald A.; Taylor, Rodney L. (Columbian Chemicals Company, USA).

U.S. US 5494955 A 19960227, 10 pp. (English). CODEN: USXXAM.
APPLICATION: US 94-225010 19940408.

IT **40372-72-3**
RL: **MOA (Modifier or additive use)**; PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Corax N330-Si 69 mixt.; **silane coupling** agent in situ mixing with carbon black to balance the reinforcement and rolling resistance properties of **rubber** compds.)

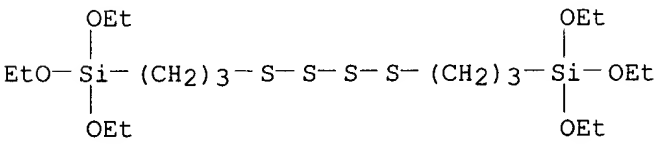
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



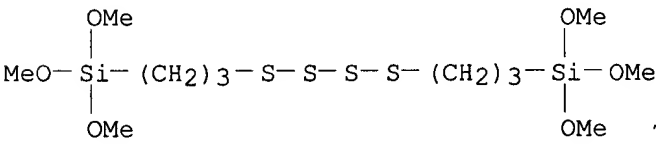
L78 ANSWER 55 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:170828 Document No. 124:204693 **Rubber** mixes and **tire** carcasses based thereon. Russell, Richard Michael (Uniroyal Englebert Reifen GmbH, Germany). Ger. Offen. DE 4424582 A1 19960118, 10 pp. (German). CODEN: GWXXBX. APPLICATION: DE 94-4424582 19940713.

IT **40372-72-3**, Bis[3-(triethoxysilyl)propyl] tetrasulfide
**41453-78-5**, Bis[3-(trimethoxysilyl)propyl] tetrasulfide
**41453-79-6 63501-60-0**
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**coupling** agent; **rubber** mixts. for **tire** carcasses contg. silica and)

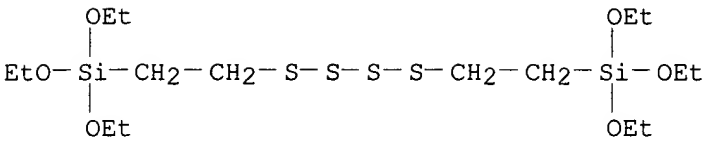
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



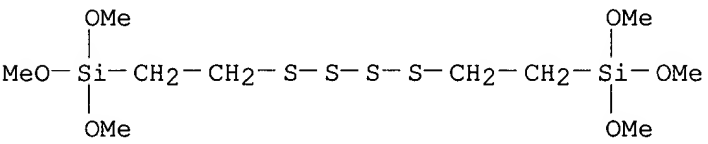
RN 41453-78-5 HCAPLUS
CN 2,15-Dioxa-7,8,9,10-tetrathia-3,14-disilahexadecane, 3,3,14,14-tetramethoxy- (9CI) (CA INDEX NAME)



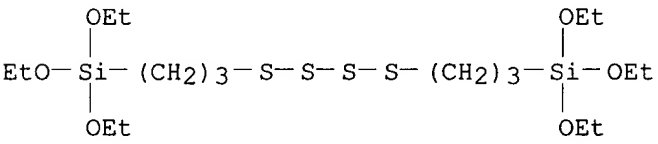
RN 41453-79-6 HCAPLUS
CN 3,14-Dioxa-7,8,9,10-tetrathia-4,13-disilahexadecane, 4,4,13,13-tetraethoxy- (9CI) (CA INDEX NAME)



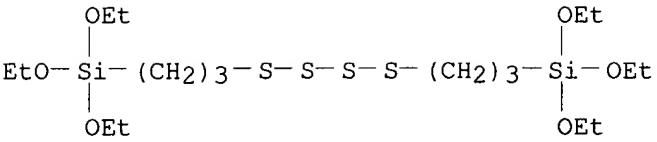
RN 63501-60-0 HCAPLUS
CN 2,13-Dioxa-6,7,8,9-tetrathia-3,12-disilatetradecane, 3,3,12,12-tetramethoxy- (9CI) (CA INDEX NAME)



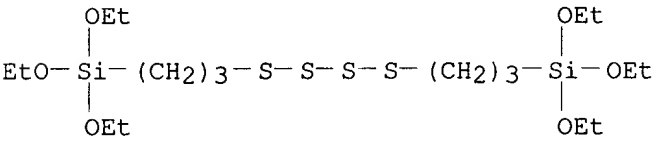
L78 ANSWER 56 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:67510 Document No. 124:90020 **Rubber** compositions for **tire** treads with low heat generation and good wet skid resistance. Saito, Akira; Sugyama, Takeshi (Asahi Chemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 07292162 A2 19951107 Heisei, 17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 94-106340 19940422.
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(tin-contg. styrene-butadiene **rubber** compns. for **tire** treads with low heat generation and good wet skid resistance)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



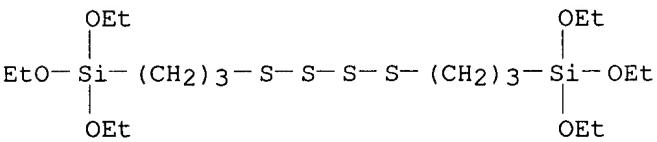
L78 ANSWER 57 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1996:67509 Document No. 124:119894 **Rubber** compositions containing silica for **tire** treads with low heat generation and good wet skid resistance. Saito, Akira; Sugyama, Takeshi (Asahi Chemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 07292161 A2 19951107 Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 94-106339 19940422.
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(in SBR compns. for **tire** treads with low heat generation and good wet skid resistance)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 58 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:950645 Document No. 124:89946 Ultra-high-reinforcing precipitated silica for **tire** and **rubber** applications. Evans, L. R.; Waddell, W. H. (Monroeville, PA, USA). Kautsch. Gummi Kunstst., 48(10), 718-23 (English) 1995. CODEN: KGUKAC. ISSN: 0022-9520.
IT **40372-72-3**, X50S
RL: **MOA (Modifier or additive use)**; USES (Uses)
(effect of ultra-high-reinforcing pptd. silica and coupling agents on properties of **tire rubber** compds.)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

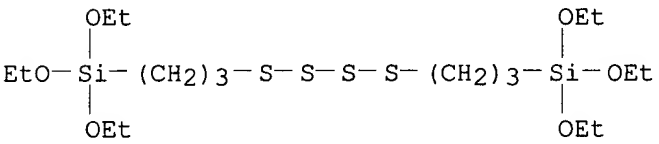


L78 ANSWER 59 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:804660 Document No. 123:316656 **Tire** tread **rubber** compositions with low rolling resistivity. Fukumoto, Takahiro; Nakada, Yoko; Mizuno, Yoichi (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 07149954 A2 19950613 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-296912 19931126.
IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; **tire** tread diene **rubber** compns. contg. butadiene-styrene **rubber** and kaolinite-based clays and **silane coupling** agents)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

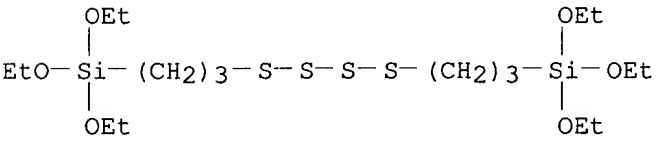


L78 ANSWER 60 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:792616 Document No. 123:172315 High-performance **tire** treads. Barrett, Gary Terence; Powell, Brian David William (Sumitomo Rubber Industries Ltd., Japan). Eur. Pat. Appl. EP 646621 A1 19950405, 8 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 94-306181 19940822. PRIORITY: GB

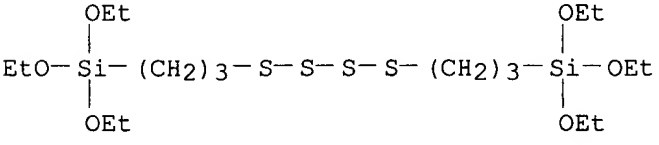
93-20226 19931001; GB 94-4983 19940315.
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; **rubber** compns. for **tire** treads contg. SBR and carbon black and silica and coupling agents)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



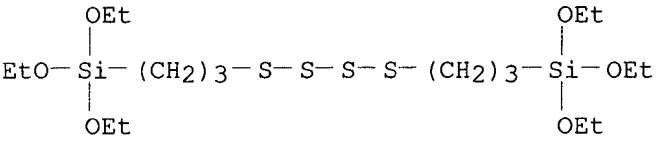
L78 ANSWER 61 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:777678 Document No. 123:172311 **Rubber** compositions for **tire** treads. Powell, Brian David William (Sumitomo Rubber Industries Ltd., Japan). Eur. Pat. Appl. EP 643099 A1 19950315, 10 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 94-306151 19940819. PRIORITY: GB 93-18849 19930911.
IT **40372-72-3**, Bis(3-triethoxysilylpropyl)tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; **rubber** compns. for **tire** treads contg. silica filler treated with coupling agents)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



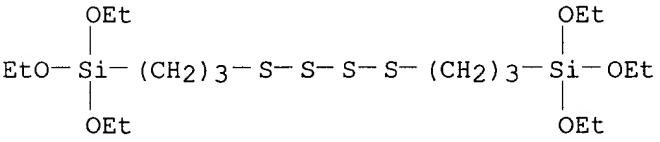
L78 ANSWER 62 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:721480 Document No. 123:115044 **Tire** belt coating **rubber** compositions with low heat buildup property. Nakajima, Ichiro (Bridgestone Corp, Japan). Jpn. Kokai Tokkyo Koho JP 07102115 A2 19950418 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-253006 19931008.
IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; USES (Uses)
(**tire** belt coatings contg. natural or polyisoprene **rubbers** with mech. strength)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 63 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:693667 Document No. 123:115039 Tread **rubber** compositions giving **tires** with good grip property on icy roads. Fukumoto, Takahiro; Nakada, Yoko; Muraoka, Kyoshige; Terakawa, Katsumi (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 07118453 A2 19950509 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-263628 19931021.
IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; antiskid **tire** tread **rubber** compns.)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

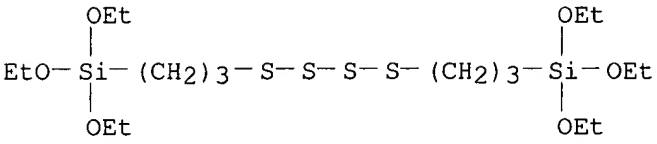


L78 ANSWER 64 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:693662 Document No. 123:115038 **Rubber** compositions for **tire** tread with good grip property on icy roads. Fukumoto, Takahiro; Nakada, Yoko; Muraoka, Kyoshige; Terakawa, Katsumi (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 07118445 A2 19950509 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-263656 19931021.
IT **40372-72-3**, Si 69
RL: DEV (Device component use); **MOA (Modifier or additive use)**; USES (Uses)
(coupling agent; antiskid **tire** tread **rubber** compns.)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

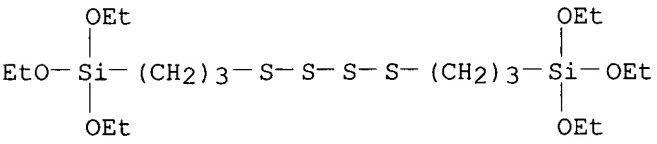


L78 ANSWER 65 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:613906 Document No. 123:58481 Formula optimization for a steel belt cord insulation compound. Cochet, Ph.; Butcher, D.; Bomal, Y. (Aubervilliers, Fr.). Kautsch. Gummi Kunstst., 48(5), 353-8 (English) 1995. CODEN: KGUKAC. ISSN: 0022-9520.
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; PRP (Properties); USES (Uses)
(coupling agent; pptd. silica in nitrile **rubber** stock for steel belted cord insulation for improved adhesion)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane,

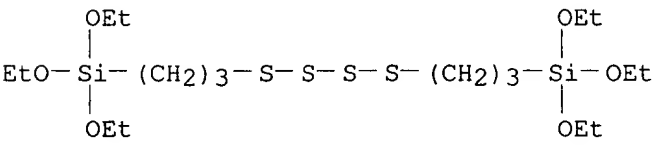
4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 66 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:524113 Document No. 122:267907 **Rubber** compositions with low rolling resistance for **tire** treads. Kawamo, Tetsuji; Aibe, Sadafumi (Yokohama Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07048476 A2 19950221 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-196378 19930806.
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**rubber** blends with low rolling resistance and good abrasion resistance for **tire** treads)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

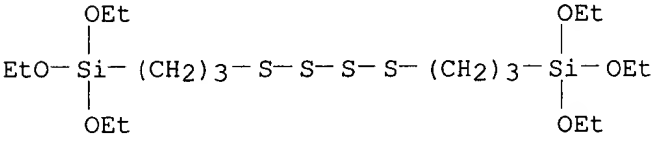


L78 ANSWER 67 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:453399 Document No. 122:216343 **Rubber** compositions for **tire** treads. Fukumoto, Takahiro; Muraoka, Kyoshige; Nakada, Yoko (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 06345901 A2 19941220 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-139615 19930610.
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(diene **rubber** compns. for studless **tire** treads contg. powd. vulcanized **rubber**-silica mixts. and **silane coupling** agents)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)

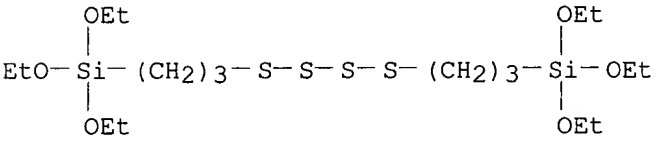


L78 ANSWER 68 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:255761 Document No. 122:57981 **Tire** tread **rubber** compositions. Muraoka, Kyoshige; Nakada, Yoko; Kikuchi, Naohiko; Tsumori, Isamu; Fukumoto, Takahiro (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 06248117 A2 19940906 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-40086 19930301.

IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(diene **rubber** blends contg. silica and **silane coupling** agents for **tire** treads)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 69 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1995:248879 Document No. 122:190130 **Rubber** compositions for **tire** treads. Muraoka, Kyoshige; Nakada, Yoko; Kikuchi, Naohiko; Tsumori, Isamu (Sumitomo Rubber Ind, Japan). Jpn. Kokai Tokkyo Koho JP 06240052 A2 19940830 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 93-25274 19930215.
IT **40372-72-3**, Si 69
RL: **MOA (Modifier or additive use)**; USES (Uses)
(**silane coupling** agent; tread **rubber** compns. contg. diene-based **rubbers** and SiO2 and softening agents for studless **tires** with good gripping property)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)



L78 ANSWER 70 OF 70 HCAPLUS COPYRIGHT 1998 ACS
1994:632883 Document No. 121:232883 Fire-resistant **rubber** compositions with reduced smoke. Yamagishi, Junichi; Yagawa, Kazuo; Hashimoto, Takatsugu; Hachitani, Kazuo (Bridgestone Corp, Japan). Jpn. Kokai Tokkyo Koho JP 06192484 A2 19940712 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 92-344812 19921224.
IT **40372-72-3**, Bis(3-triethoxysilylpropyl) tetrasulfide
RL: **MOA (Modifier or additive use)**; USES (Uses)
(coupling agents; in **rubber** compns. contg. fireproofing agents for **tires**)
RN 40372-72-3 HCAPLUS
CN 3,16-Dioxa-8,9,10,11-tetrathia-4,15-disilaoctadecane, 4,4,15,15-tetraethoxy- (9CI) (CA INDEX NAME)